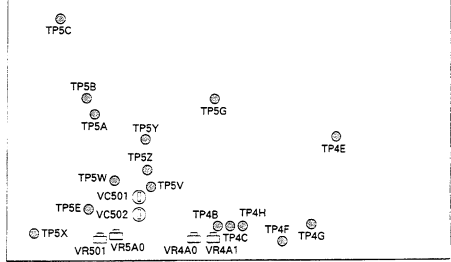


Electrical Adjustments

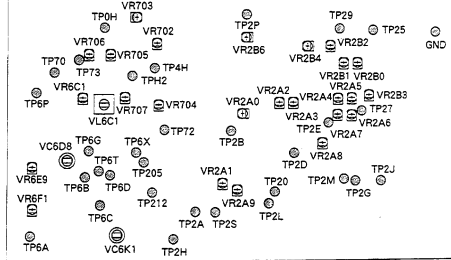
Circuit adjustments become necessary, in most cases due to the wear of mechanical parts or following the replacement of critical components such as the video head. Certain circuit defects can often cause circuit adjustments to vary considerably. Should this occur, be sure to determine the nature of the defect and repair prior to proceeding with adjustments.

Always use the test equipment recommended for a given adjustment procedure. If the appropriate test equipment is not available, it is recommended that adjustments NOT be attempted. Refrain from the indiscreet adjustment of circuit adjustment controls unless properly equipped to do so.

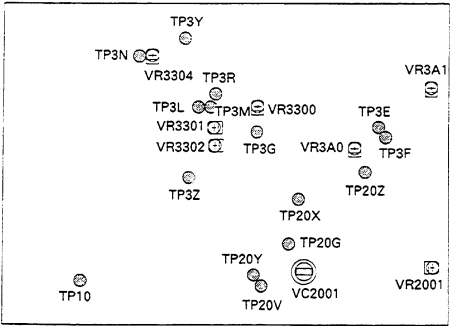
PCB - CONTROL (COMPONENT SIDE)



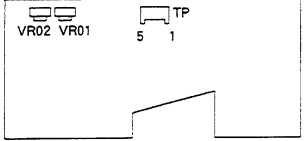
PCB - SIGNAL (COMPONENT SIDE)



PCB - FUNCTION (COMPONENT SIDE)



PCB - HEAD AMP (COMPONENT SIDE)



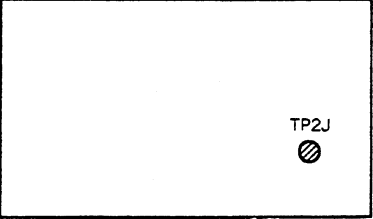
SERVO CIRCUIT

1. PB SWITCHING POINT

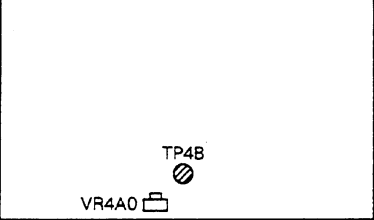
MODE

Playback
Alignment tape
(Grey scale)

PCB - SIGNAL (COMPONENT SIDE)



PCB - CONTROL (COMPONENT SIDE)



ADJ. METHOD

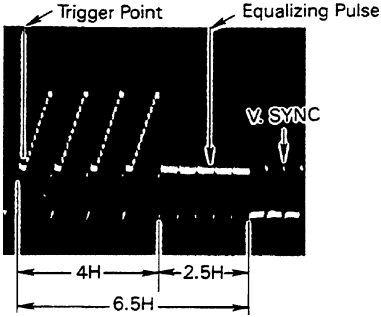
Oscilloscope to TP2J(SIGNAL)
Oscilloscope's EXT trigger to TP4B (CONTROL)
EXT trigger (—) VR4A0 (CONTROL)

DIV 20mV
TIM 50µSec
(10:1)

ADJUSTMENT PROCEDURE

1. Set the VIDEO switch (S705) to "B/W".
2. Set the NORMAL TRACKING control(VR702) to centre click stop position.
3. Adjust VR4A0 so that the trigger point is located at $6.5 \pm 1.0H$ before the vertical synchronizing signal.

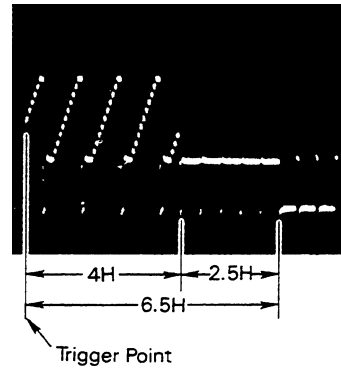
(—)slope



EXT triger(+)

4. Check that the trigger point is located at $6.5 \pm 1.0H$ before the vertical synchronizing signal.

(+)slope

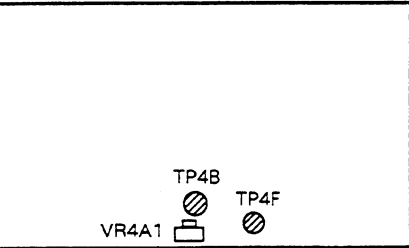


2. TRACKING PRESET

MODE

Playback
Alignment tape (Colour bar)

PCB - CONTROL (COMPONENT SIDE)



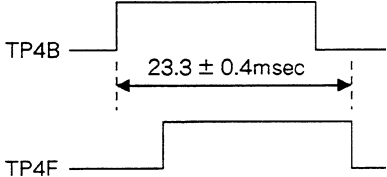
ADJ. METHOD

Oscilloscopes CH-1 to TP4F (CONTROL)
Oscilloscope's CH-2 to TP4B (CONTROL)
VR4A1 (CONTROL)

DIV 0.5V
TIM 5msec
(10:1)

ADJUSTMENT PROCEDURE

1. Set the NORMAL TRACKING control (VR702) to centre click stop position.
2. Adjust VR4A1 so that the time is $23.3 \pm 0.4msec$ like the illustration.

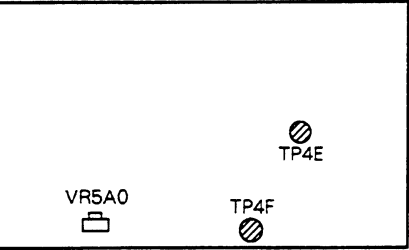


3. SLOW AND STILL CIRCUIT

MODE

Playback 3H self recorded tape at 24H mode

PCB - CONTROL (COMPONENT SIDE)



Still mode

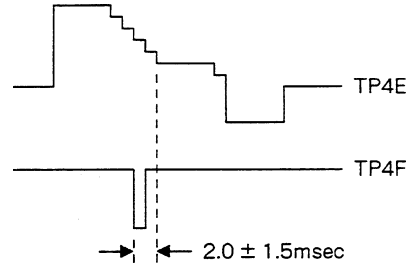
ADJ. METHOD

Oscilloscope's CH-1 to TP4F (CONTROL)
Oscilloscope's CH-2 to TP4E (CONTROL)
VR5A0 (CONTROL)

DIV 0.2V
TIM 10msec
(10:1)

ADJUSTMENT PROCEDURE

1. Adjust VR5A0 so that the time is $2.0 \pm 1.5msec$ like the illustration.



2. Adjust VR701 to eliminate any jitter in the still picture.

Y/C SIGNAL CIRCUIT

4. CG—AGC

MODE

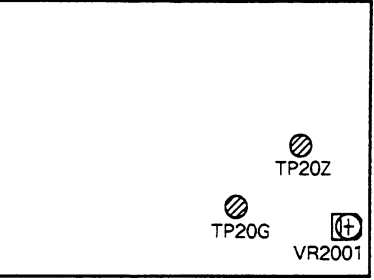
Supply video signal (G card) STOP mode

ADJ. METHOD

Oscilloscope to TP20Z (FUNCTION)
Oscilloscope's GND to TP20G (FUNCTION)
VR2001 (FUNCTION)

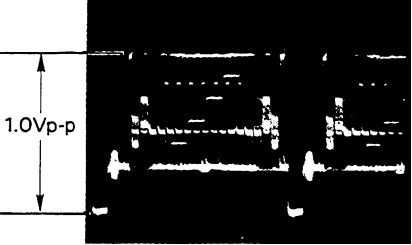
DIV 20mV
TIM 10µsec
(10:1)

PCB - FUNCTION (COMPONENT SIDE)



ADJUSTMENT PROCEDURE

1. Adjust VR2001 so that the video signal is 1.0Vp-p.

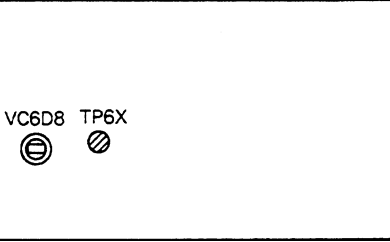


5. CHROMA X'TAL OSC

MODE

Playback Alignment tape (colour bar)

PCB - SIGNAL (COMPONENT SIDE)



ADJ. METHOD

Frequency counter to TP6X (SIGNAL) VC6D8 (SIGNAL)

ADJUSTMENT PROCEDURE

1. Adjust VC6D8 so that the frequency at TP6X is $4.433619MHz \pm 30Hz$.

6. S-VHS AGC LEVEL

MODE

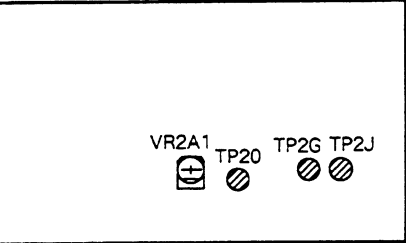
Supply video signal (G card) STOP mode

ADJ. METHOD

Oscilloscope to TP2J (SIGNAL) VR2A1 (SIGNAL)

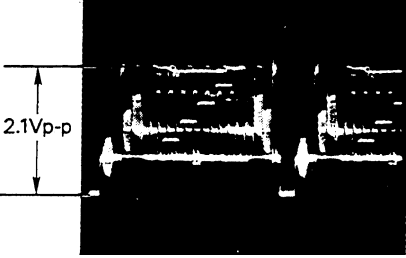
DIV 50mV
TIM 10µsec
(10:1)

PCB - SIGNAL (COMPONENT SIDE)



ADJUSTMENT PROCEDURE

- 1 Short circuit TP20 and TP2G
2. Open the VIDEO OUT socket
3. Adjust VR2A1 so that the video signal is 2.1Vp-p.

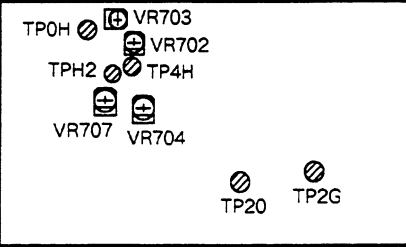


7. VERTICAL CORRELATION

MODE

Supply video signal (Colour bar) STOP mode

PCB - SIGNAL (COMPONENT SIDE)



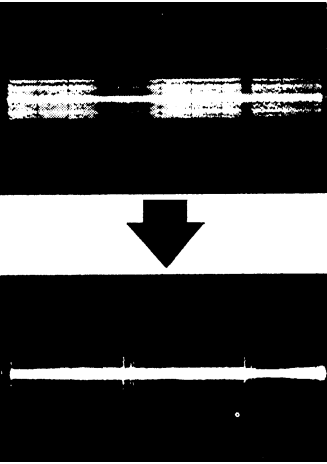
ADJ. METHOD

Oscilloscope's CH-1 to TP0H (SIGNAL)
Oscilloscope's CH-2 to TPH2 (SIGNAL)
Oscilloscope's CH-2 to Invert mode
Oscilloscope to ADD mode
VR702 (SIGNAL)
VR703 (SIGNAL)
TP20(SIGNAL)
TP2G (SIGNAL)

DIV 10mV
TIM 5msec
(10:1)

ADJUSTMENT PROCEDURE

- 1.Short circuit TP20 and TP2G.
- 2.Alternate adjustments in the following sequence: VR703 and VR702 so that the chroma level is minimum.



ADJ. METHOD

Oscilloscope's CH-1 to TP0H (SIGNAL)
Oscilloscope's CH-2 to TP4H (SIGNAL)
Oscilloscope's CH-2 to Invert mode
Oscilloscope to ADD mode
VR704 (SIGNAL)
VR707 (SIGNAL)

ADJUSTMENT PROCEDURE

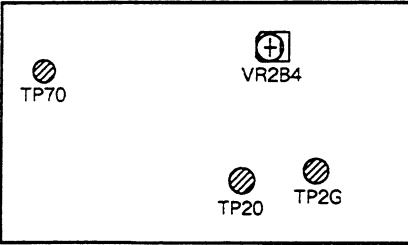
3. Alternate adjustments in the following sequence: VR707 and VR704 so that the chroma level is minimum.
Note: The volt range of CH-1 and CH-2 must be the same range.

8. OUTPUT LEVEL OF DCF

MODE

Supply video signal (G card)

PCB - SIGNAL (COMPONENT SIDE)



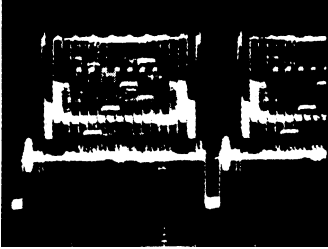
ADJ. METHOD

Oscilloscope to TP70 (SIGNAL)
VR2B4 (SIGNAL)
TP20(SIGNAL)
TP2G (SIGNAL)

DIV 10mV
TIM 10µsec
(10:1)

ADJUSTMENT PROCEDURE

1. Short circuit TP20 and TP2G.
2. Take the amplitude of waveform at TP70.
3. Open circuit TP20 and TP2G.
4. Adjust VR2B4 so that the amplitude of waveform at TP70 is same level of step 2.

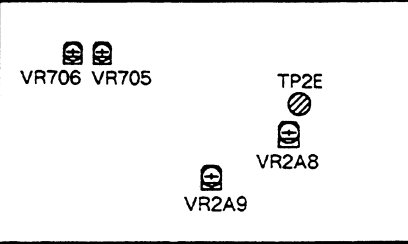


9. Y/C SEPARATION

MODE

Supply video signal (Colour bar) STOP mode

PCB - SIGNAL (COMPONENT SIDE)



ADJ. METHOD

Oscilloscope to TP2E (SIGNAL)
VR705 (SIGNAL)
VRT06 (SIGNAL)
VR2A8 (SIGNAL)
VR2A9 (SIGNAL)

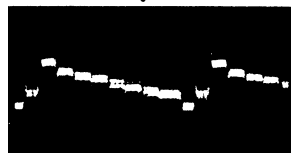
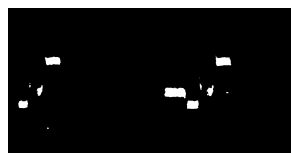
DIV 20mV
TIM 10µsec
(10:1)

ADJUSTMENT PROCEDURE

1. Turn VR2A8 and VR2A9 fully counter-clockwise as seen from component side.
2. Alternate adjustments in the following sequence: VR705 and VR706 so that the magenta level is minimum.

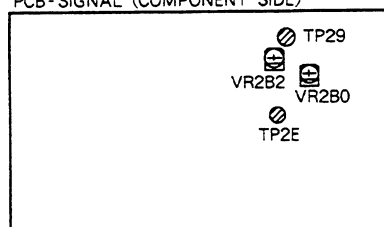
Continues next page.

Electrical Adjustments Cont'd



10. SUB-EMPHASIS INPUT LEVEL/S-VHS CLAMP INPUT LEVEL

MODE
Supply video signal (G card) STOP mode
PCB-SIGNAL (COMPONENT SIDE)

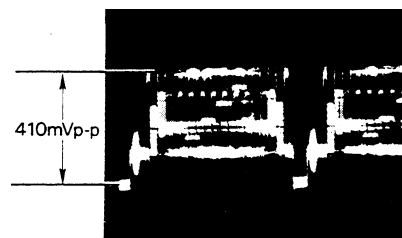


ADJ. METHOD
Oscilloscope to TP29 (SIGNAL)
VR2B2 (SIGNAL)

DIV 10mV
TIM 10μsec
(10:1)

ADJUSTMENT PROCEDURE

1. Adjust VR2B2 so that the luminance signal is 410mVp-p.



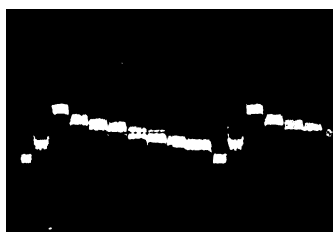
MODE
Supply video signal (Colour bar) STOP mode

ADJ. METHOD
Oscilloscope to TP2E(SIGNAL)
VR2B0(SIGNAL)

DIV 20mV
TIM 10μsec
(10:1)

ADJUSTMENT PROCEDURE

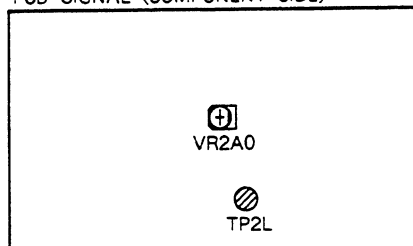
2. Adjust VR2B0 so that the video signal level of S-VHS mode coincides with the video signal level of Normal VHS mode.



11. Y SIGNAL NOISE REDUCTION

MODE
Supply video signal (Colour bar) STOP mode
S-VHS SW to OFF

PCB-SIGNAL (COMPONENT SIDE)

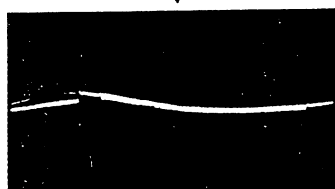


ADJ. METHOD
Oscilloscope to TP2L (SIGNAL)
VR2A0 (SIGNAL)

DIV 20mV
TIM 2msec
(10:1)

ADJUSTMENT PROCEDURE

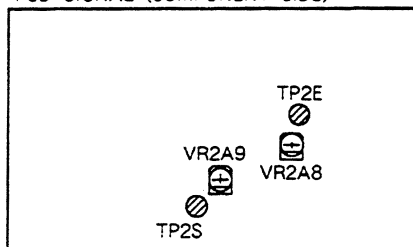
1. Adjust VR2A0 so that the signal level is minimum.



12. WHITE CLIP AND DARK CLIP

MODE
Supply video signal (G card)
3H REC mode
S-VHS SW to ON

PCB-SIGNAL (COMPONENT SIDE)



MODE
Oscilloscope to TP2E (SIGNAL)
Oscilloscope's EXT trigger to TP2S (SIGNAL)
VR2AS (SIGNAL)
VR2A9 (SIGNAL)

DIV 10mV
(VARIABLE mode)
TIM 10μsec
(10:1)

ADJUSTMENT PROCEDURE

1. Adjust VR2A8 (W-CLIP) and VR2A9 (D-CLIP)

so that the overshoot appearing at the white side and the undershoot below the sync tip are 110% and 70% respectively.



MODE
S-VHS SW to OFF

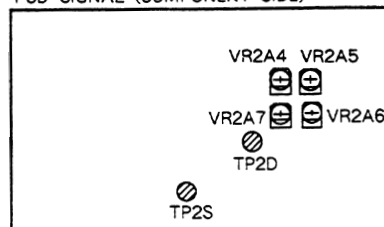
ADJUSTMENT PROCEDURE

2. Check that the white overshoot and the sync tip undershoot is 100%±10% and 50%±10% respectively.

13. CARRIER SET DEVIATION

MODE
Supply video signal (G card) 3M REC mode S-VHS SW to ON

PCB-SIGNAL (COMPONENT SIDE)



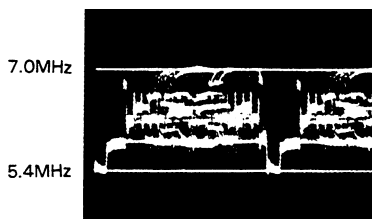
ADJ. METHOD
Oscilloscope to TP2D (SIGNAL) via the carrier checker.
Oscilloscope's EXT trigger to TP2S(SIGNAL)

VR2A5 (SIGNAL)
VR2A6 (SIGNAL)

DIV 20mV
TIM 10μsec
(10:1)

ADJUSTMENT PROCEDURE

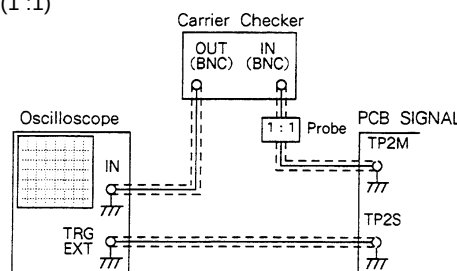
1. Adjust VR2A5(FM CAR SET) and VR2A6 (FM DEV SET) so that the response waveform 5.4MHz (sync-tip) line and 7.0MHz (deviation) just touch each of the white lines on the oscilloscope.



MODE
S-VHS SW to OFF

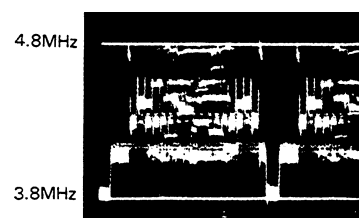
ADJ. METHOD
VR2A4 (SIGNAL)
VR2A7 (SIGNAL)

DIV 50mV
TIM 10μsec
(1:1)



ADJUSTMENT PROCEDURE

2. Adjust VR2A4 (FM CAR SET) and VR2A7(FM DEV SET) so that the response waveform 3.8MHz (sync-tip) line and 4.8MHz (deviation) just touch each of the white lines on the oscilloscope.

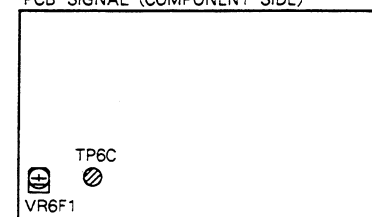


14. CHROMA AFC

MODE
EXT mode
REC mode

Don't supply a VIDEO signal

PCB-SIGNAL (COMPONENT SIDE)



ADJ. METHOD
Frequency counter to TP6C (SIGNAL)
VR6F1 (SIGNAL)

ADJUSTMENT PROCEDURE

1. Adjust VR6F1 so that the frequency is 5056.6±5.0kHz.

Note: When the VIDEO OUT socket is open circuit a warning buzzer sounds. Push the clear button of the front to stop the buzzer.

15. A) COLOUR REC LEVEL

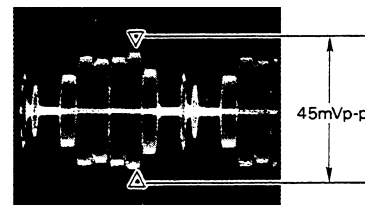
MODE
Supply video signal (Colour bar)
3H REC mode S-VHS SW to ON

ADJ. METHOD
Oscilloscope to TP connector pin (4) and pin (5) (HEAD-AMP) via the pad
Oscilloscope's EXT trigger to TP2S (SIGNAL)
VR01 (HEAD-AMP)

DIV 10mV
TIM 10μsec
(1:1)

ADJUSTMENT PROCEDURE

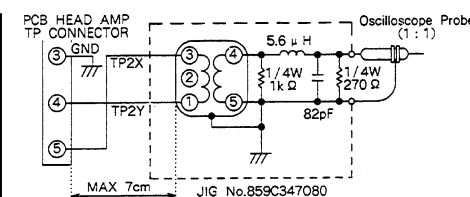
1. Turn VR02 counterclockwise.
2. Adjust VR01 so that the magenta level is 45mVp-p.



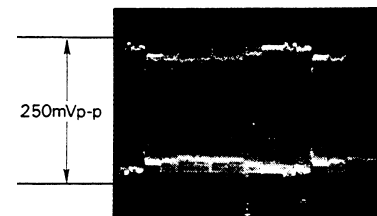
15. B) FM REC LEVEL

ADJ. METHOD
VR02 (HEAD-AMP)

DIV 5mV
TIM 10μsec
(10:1)



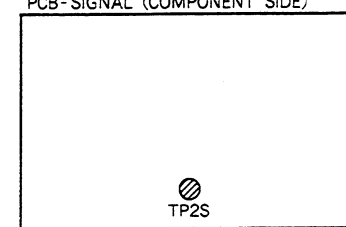
MODE
S-VHS SW to OFF



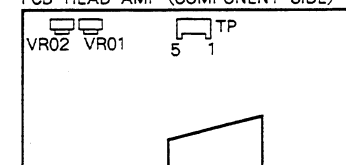
ADJUSTMENT PROCEDURE

3. Adjust VR02 so that the luminance FM level is 250mVp-p.

PCB-SIGNAL (COMPONENT SIDE)



PCB-HEAD AMP (COMPONENT SIDE)



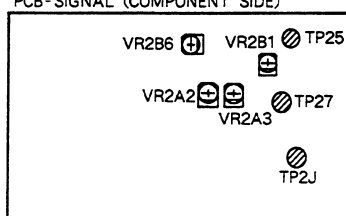
ADJUSTMENT PROCEDURE

4. Check that the luminance FM level is 250±10mVp-p.

16. DEMODULATION SENSITIVITY

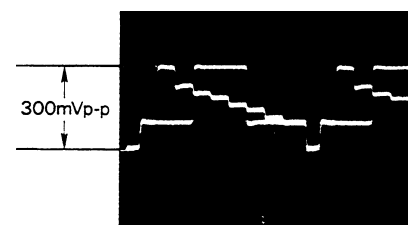
MODE
Playback Alignment tape (Colour bar)

PCB-SIGNAL (COMPONENT SIDE)



ADJ. METHOD
Oscilloscope to TP27 (SIGNAL)
VR2A2 (SIGNAL)

DIV 10mV
TIM 10μsec
(10:1)



ADJUSTMENT PROCEDURE

1. Set the VIDEO SW to "COLOUR".
2. Turn VR2A2 fully counterclockwise as seen

- from component side.
3. Turn VR2A2 clockwise so that the demodulation signal is 300mVp-p.

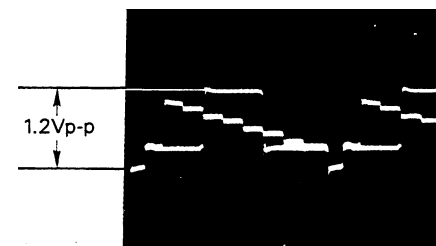
MODE
Playback S-VHS
Alignment tape (PC(S))

ADJ. METHOD
Oscilloscope to TP25 (SIGNAL)
VR2A3 (SIGNAL)

DIV 50mV
TIM 10μsec
(10:1)

ADJUSTMENT PROCEDURE

4. Turn VR2A3 fully counterclockwise as seen from component side.
5. Turn VR2A3 clockwise so that the demodulation signal is 1.2Vp-p.

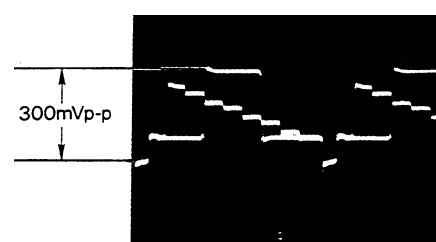


ADJ. METHOD
Oscilloscope to TP27 (SIGNAL)
VR2B1 (SIGNAL)

DIV 10mV
TIM 10μsec
(10:1)

ADJUSTMENT PROCEDURE

6. Adjust VR2B2 so that the level is 300mVp-p.

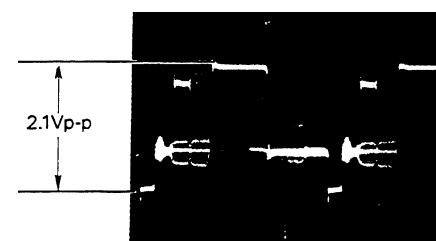


ADJ. METHOD
Oscilloscope to TP2J (SIGNAL)
VR2B6 (SIGNAL)

DIV 50mV
TIM 10μsec
(10:1)

ADJUSTMENT PROCEDURE

7. Open the VIDEO OUT terminal.
8. Adjust VR2B6 so that the video signal is 2.1Vp-p.

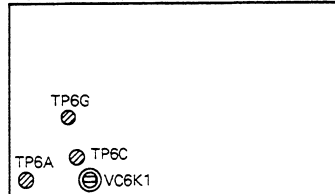


17. PILOT BURST PHASE

MODE
Supply video signal (Colour bar) STOP mode S-VHS SW to ON

Electrical Adjustments Cont'd

PCB-SIGNAL (COMPONENT SIDE)



ADJ. METHOD

Vector scope to
TP6A (SIGNAL)
VC6K1 (SIGNAL)
TP6X (SIGNAL)
TP6C (SIGNAL)
TP6G (SIGNAL)

ADJUSTMENT PROCEDURE

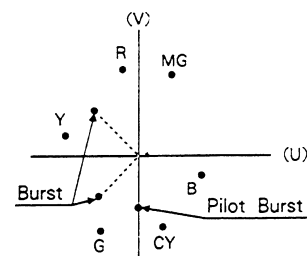
1. Short circuit TP6C and TP6G.
2. Connect the EXT $\emptyset$ REF terminal of vector scope to TP6X.
3. Locate the burst to the fixed position, and adjust VC6K1 so that the pilot burst located 270° from U-axis.
4. Adjust VR6E9 so that the pilot burst level is about 1.1 times the burst level.

ADJ. METHOD

VR6E9 (SIGNAL)

ADJUSTMENT PROCEDURE

5. Alternate adjustments of step 3 and step 4.

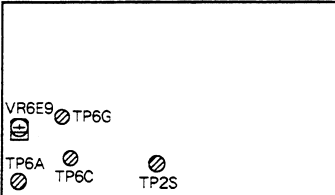


18. PILOT BURST LEVEL

MODE

Supply video signal (Colour bar)
STOP mode S-VHS SW to ON

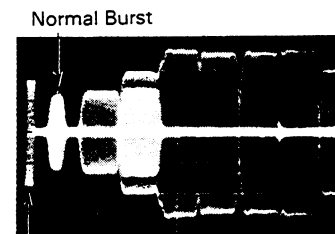
PCB-SIGNAL (COMPONENT SIDE)



ADJ. METHOD

Oscilloscope to TP6A (SIGNAL)
Oscilloscope's EXT trigger to
TP2S (SIGNAL)
VR6E9 (SIGNAL)
TPSC (SIGNAL)
TP6G (SIGNAL)

DIV 20mV
TIM 5 μ sec
(10:1)



Pilot Burst

ADJUSTMENT PROCEDURE

1. Short circuit TP6C and TP6G.
2. Adjust VR6E9 so that the pilot burst amplitude is 1.1 times the burst signal in S-VHS mode (S803:ON).
3. Check that the pilot burst signal disappears in Normal VHS mode (S803:OFF)

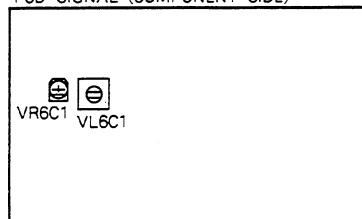
19. CHROMA NOISE REDUCTION

MODE

Playback

Alignment tape (Colour bar)

PCB-SIGNAL (COMPONENT SIDE)



ADJ. METHOD

Oscilloscope to
TP6P (SIGNAL)
VL6C1 (SIGNAL)
VRBC1 (SIGNAL)

DIV 5mV
TIM 2msec
(10:1)

ADJUSTMENT PROCEDURE

1. Alternate adjustments in the following sequence: VL6C1 and VR6C1 so that the chroma level is minimum.
2. Check that the chroma level is less than 30mVp-p.



AUDIO CIRCUIT

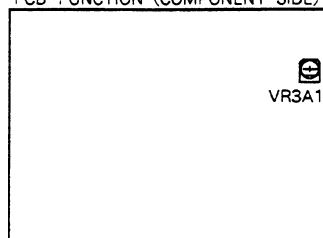
* Supply video signal to the VIDEO IN socket.

20. PLAYBACK AUDIO LEVEL

MODE

Playback Alignment tape (Colour bar, 1kHz audio)

PCB-FUNCTION (COMPONENT SIDE)



ADJ. METHOD

AC voltmeter to AUDIO IN socket VR3A1 (FUNCTION)

ADJUSTMENT PROCEDURE

1. Adjust VR3A1 for an Audio output level of -6dBs (388m Vr.m.s.).
2. Confirm that the level fluctuation is less than

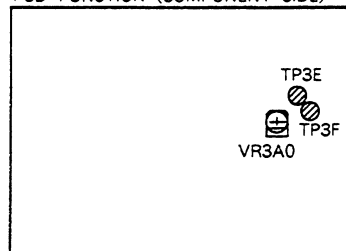
± 1 dBs. If level fluctuation is over ± 1 dB then check the mechanical adjustments.

21. AUDIO BIAS LEVEL

MODE

3H REC mode

PCB-FUNCTION (COMPONENT SIDE)



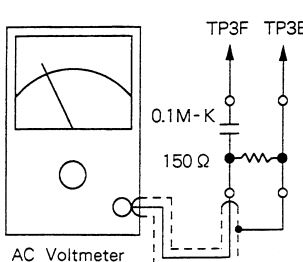
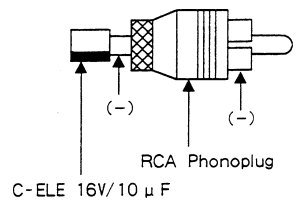
ADJ. METHOD

AC Voltmeter to TP3E (FUNCTION) and TP3F (FUNCTION) through a high pass filter.
Note: Be careful that the AC Voltmeter housing does not touch the VCR chassis.

VR3A0 (FUNCTION)

ADJUSTMENT PROCEDURE

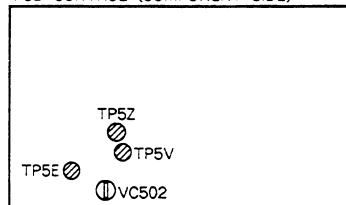
1. Insert a shorted RCA type Phonoplug into the AUDIO IN socket.
2. Confirm that the monitor TV etc. does not affect the indication of the AC voltmeter and then adjust VR3A0 for a level of 2.8mVr.m.s.
Note: Do not set the VCR to PLAY mode with the AC voltmeter connected. (The audio amplifier will be over-loaded.)



TIMER CIRCUIT

22. CLOCK CRYSTAL

PCB-CONTROL (COMPONENT SIDE)



MODE

ADJ. METHOD

Frequency counter to TP5V (CONTROL) via CM-1 output of oscilloscope
Note: Attach insulating tube to tip of CH-1 probe and connect it to TP5V

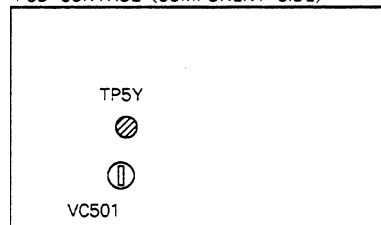
TP5E (CONTROL)
TP5Z (CONTROL)
VC502 (CONTROL)

ADJUSTMENT PROCEDURE

1. Unplug the power cord from the AC source.
2. Supply DC voltage 3.90 $\pm$ 0.05V to TP5Z(—) and TP5E(+).
3. Adjust VC502 so that the frequency is 32.768kMz $\pm$ 0.1Hz.

23. 6.29MHZ CRYSTAL

PCB-CONTROL (COMPONENT SIDE)



ADJ. METHOD

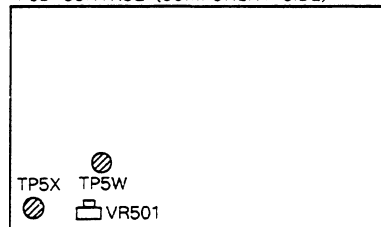
Frequency counter to TP5Y (CONTROL) VC501 (CONTROL)

ADJUSTMENT PROCEDURE

1. Adjust VC501 so that the frequency is 1.572864MHz $\pm$ 2Mz.

24. REMOTE CONTROL CIRCUIT

PCB-CONTROL (COMPONENT SIDE)



ADJ. METHOD

Frequency counter's input A to TP5W (CONTROL) and input B to TP5X (CONTROL) VR501 (CONTROL) Trigger of input A and B to (—)

ADJUSTMENT PROCEDURE

1. Make remote control JIG. as shown in Fig. 24-1.
Note: When pushing the 32 button, confirm that entire resistor value is 1056 $\pm$ 0.2k Ω .
2. Insert the remote control JIG to the REMOTE jack.
3. Push the 32 button of remote control JIG and adjust VR501 so that the period is 31.74 $\pm$ 0.05msec.

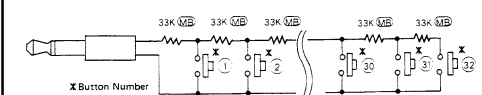


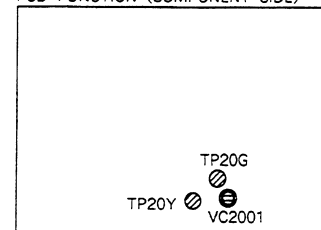
Fig. 24-1

25. SIZE OF DISPLAY CHARACTER

MODE

Supply video signal (Colour bar) STOP mode

PCB-FUNCTION (COMPONENT SIDE)



ADJ. METHOD

Frequency counter to TP20Y (FUNCTION)
Frequency counter's GND to TP20G (FUNCTION) VC2001 (FUNCTION)

ADJUSTMENT PROCEDURE

1. Turn on the DISPLAY button (S807) so that

the USER SELECTION display appears, and change the contents of TIME DATE SIZE to small.

Mechanical Adjustments

1. Cleaning of Deck

The following parts require cleaning whenever serviced to maintain satisfactory performance.

1 -1 Video Head

- A. Clean the video heads in the following method if dust and other foreign objects on the video heads disturb the normal playback of images: Dampen video head cleaning cloth with alcohol. Hold the cloth against the drum and turn the drum slowly counterclockwise to clean. Note: Do not directly touch the head attached to the upper drum. The head is very hard but brittle to impact, especially in the vertical direction. Do not apply force in the vertical direction.
- B. Allow residual alcohol to dry thoroughly before running tape otherwise, the liquid may stick to and damage the tape.

1-2 Tape Transport (Refer to Fig. 1 -1.)

Clean the following parts of the tape transport.

1. Tension regulation arm S
2. Tension arm
3. Supply guide pole
4. FE head
5. Impedance roller
6. Supply guide roller
7. Supply slant pole
8. Upper and lower drum
9. Takeup slant pole
10. Takeup guide roller
11. A/C head
12. Takeup guide pole
13. Pinch roller
14. Capstan shaft
15. Takeup guide arm
16. Tension regulation arm T

- A. Clean the tape transport with gauze dampened with alcohol, except the supply and takeup guide rollers. If Guide rollers are stained with dust, clean them with dry gauze or exchange them for new parts.
- B. Allow residual alcohol to dry thoroughly before running a tape. Otherwise the liquid may stick to and damage the tape.

1 -3 Reel Disk Drive System

- A. Clean the reel disk braking surfaces and the ribbed belt.
- B. Clean the above parts with gauze dampened with alcohol.
- C. Allow the residual liquid to dry thoroughly before operating the reel disk.

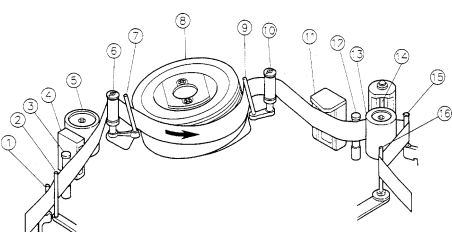


Fig.1-1

2. Replacement of Major Parts

2-1 Cassette Housing

2-1-1 Removal (Refer to Fig. 2-1-1~2-1-2.)

- A. Set the VCR to the eject mode.
- B. Remove the top panel, bottom panel, and front panel.
- C. Unfasten the snap on the cable holder and remove the cable holder from the cassette housing as shown in Fig. 2-1-1.
- D. Unscrew four cassette housing fastening screws (a), (b), (c) and (d). Raise the cassette housing slowly in the direction shown by the arrow.

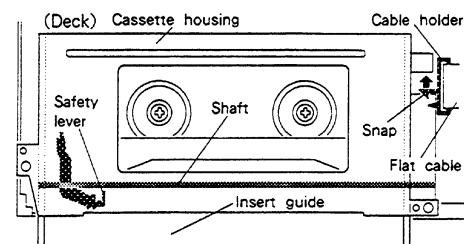


Fig. 2-1-1

2-1-2 Installation (Refer to Fig. 2-1-1~2-1-3.)

- A. Slowly lower the cassette housing onto the main plate of the deck so that the safety lever enters between the insert guide and the shaft as shown in Fig. 2-1-1. Align the two positioning holes (e) and (f) and the two U holes (g) and (h) located on the cassette housing with the matching holes in the deck.
- B. In step A above, if the front loading gear of the cassette housing does NOT engage the boss on the main plate, carefully push the gear toward the front of the VCR using a small-diameter screwdriver, as illustrated in Fig. 2-1-3. If the gear still will not engage, rotate the Front Loading Gear a few degrees from the below the deck until the gear engages the boss correctly.
- C. Fasten the housing to the deck with the four screws (a), (b), (c) and (d).

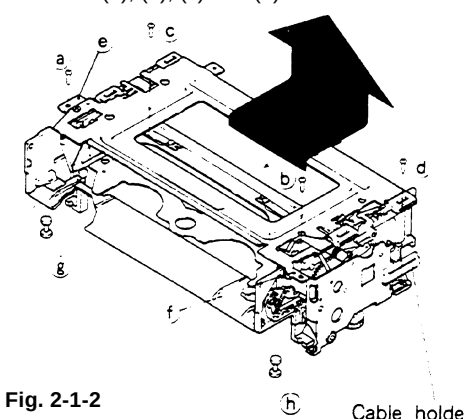


Fig. 2-1-2

2-2 Lock arm and Drive gear

2-2-1 Removal (Refer to Fig. 2-1-3~2-2.)

- A. Unfasten four snaps (a), (b), (c) and (d) as shown in Fig. 2-1-3, and remove the side plate TU.
- B. Turn the FL SW lever clockwise to separate the FL SW lever from the drive gear, and pull the lock arm and drive gear to remove them from the shaft as shown in Fig. 2-2.

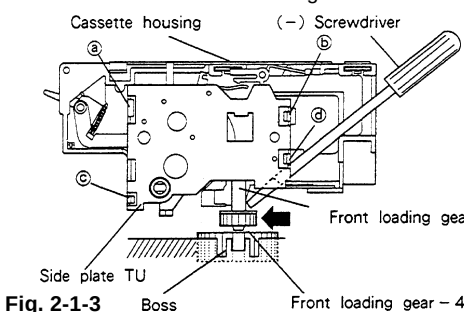


Fig. 2-1-3

Mechanical Adjustments Cont'd

2-2-2 Installation (Refer to Fig. 2-1-3~2-2.)

- Install the drive gear on the shaft as shown in Fig. 2-2.
- Line the matching mark on the drive gear and beginning of gear section on the lock arm as shown in Fig.2-2, and install the lock arm.
- Install the side plate TU to the cassette housing, and secure it with four snaps (a), (b) (c) and (d) as shown in Fig. 2-1-3 (see previous page).

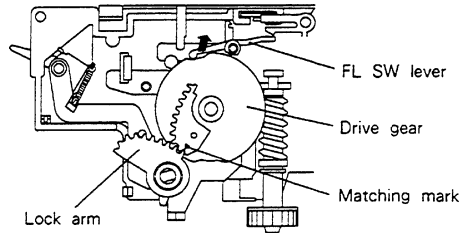


Fig. 2-2

2-3 Drum Assembly

2-3-1 Removal (Refer to Fig. 2-3-1~2-3-3)

- Disconnect the roller units connector (CP) from the control PCB.
 - Unscrew the roller unit fastening screw (a) and remove the roller unit.
 - Unscrew three fastening screws (b), (c) and (d) and remove the head amplifier PCB which is connected to the drum assembly.
 - Unscrew the brush fastening screw and remove the brush as shown in Fig. 2-3-2.
- Note:** The cable and connector between the drum and head amplifier may be damaged if the cable is pulled strongly, as the cable is short. Remove the shield cap of the PCB, raise the PCB slightly and disconnect the flat cable connector and stopper is shown in Fig. 2-3-3.) Disconnect the grounding wire and remove the head amplifier PCB.
- Unscrew three drum fastening screws (e), (f) and (g) from the reverse side of the deck.
 - Remove the drum assembly by raising it with care not to touch other parts around the drum assembly.
 - Disconnect the connectors from the drum assembly.

2-3-2 Installation (Refer to Fig. 2-3-1, 2-3-2.)

- Connect the connectors to a new drum assembly.
- Place the new drum assembly on the main plate of the deck slowly being careful not to touch other parts.
- Fasten the drum assembly with three fastening screws (e), (f) and (g) on the reverse side of the deck.
- Fasten the brush with the fastening screw.
- Connect the head amplifier PCB to the drum assembly and fasten the PCB with three screws (b), (c) and (d).
- Connect the roller unit s connector (CP) to the control PCB.
- Fasten the roller unit with the fastening screw (a). Note: Conduct the mechanism interchangeability adjustment outlined in Para. 3 to give optimum performance when the drum assembly is replaced.

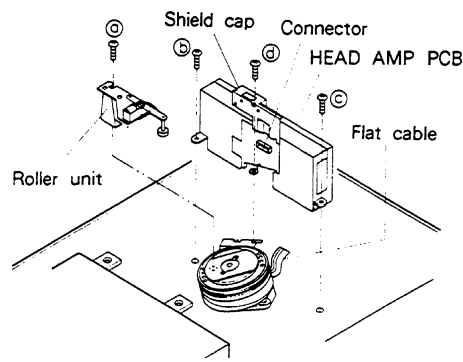


Fig. 2-3-1

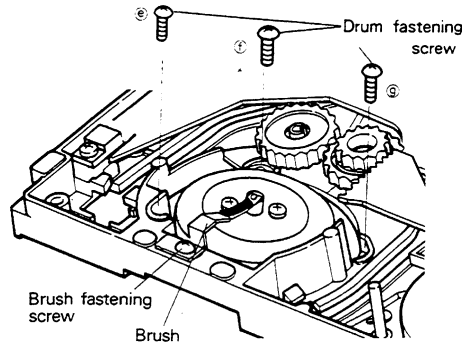


Fig. 2-3-2

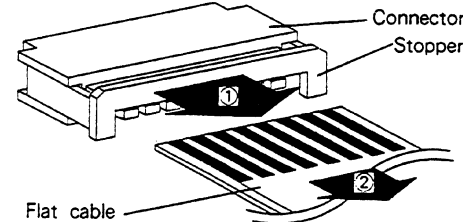


Fig. 2-3-3

2-4 Upper Drum

2-4-1 Removal (Refer to Fig. 2-4-1.)

- Unscrew the roller unit fastening screw and remove the roller unit.
 - Unsolder two inside soldered terminals of each head on the upper drum.
 - Unscrew the upper drum fastening screws.
 - Remove the upper drum slowly and carefully.
- Note:** If the upper drum is difficult to remove, heat the upper drum fastening screw holes with a soldering iron, and the drum will be easily removed.

2-4-2 Installation (Refer to Fig. 2-4-1.)

- Note:** Handle the upper drum carefully as the video heads are fragile.
- Position the lower drum so that the hole in the shaft faces the operator. Align the upper drum with the lower drum so that the CH1 mark on the upper drum is on the right side, and couple the drums.
 - Fasten the upper drum with two screws. (Tighten the screws alternately.)
 - Solder the terminals not soldered on the upper drum.
 - Clean the video heads as outlined in Para.1-1.

2-5 Ribbed Belt

2-5-1 Removal (Refer to Fig. 2-5)

- Remove the screw (a) retaining the holder belt unit, and remove the holder belt unit.
- Detach the capstan brake spring from the tension unit and capstan brake unit.
- Remove the screw (b) retaining the tension

unit and the nut (c), and remove the tension unit.

D.Remove the ribbed belt from the capstan motor and the belt pulley.

2-5-2 Installation (Refer to Fig. 2-5-1, 2-5-2)

- Confirm that the groove of the new ribbed belt is turned to the inside, as shown in Fig. 2-5-2, and then install the ribbed belt to the capstan motor and the belt pulley.
- Install the tension unit to the main plate with the screw (b) and the nut (c).
- Fasten the capstan brake spring to the tension unit and capstan brake unit.
- Install the holder belt unit to the main plat with the screw (a).

Note: Make certain that the new belt is free from grease, before installing.

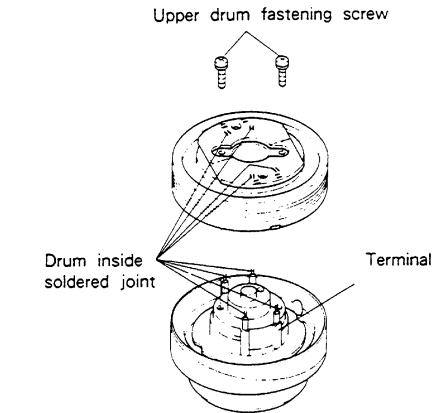


Fig. 2-5-1

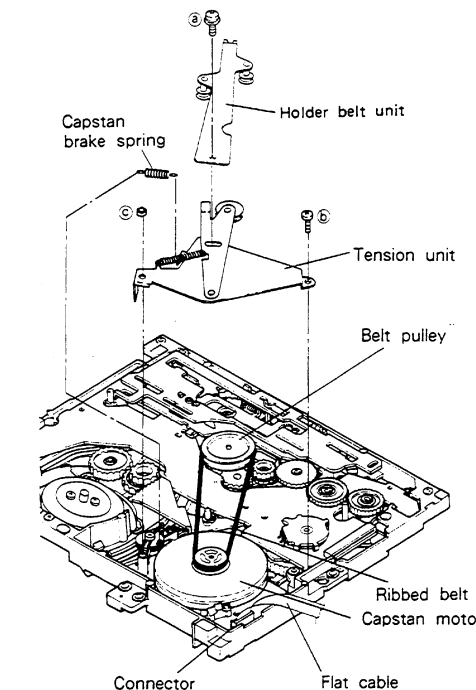


Fig. 2-5-2

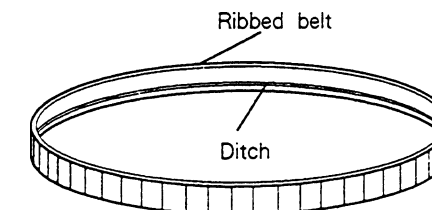


Fig. 2-5-2

2-6 Capstan Motor

2-6-1 Removal (Refer to Fig. 2-5, 2-6)

- Disconnect the flat cable.
- Detach the capstan brake spring from the tension unit and capstan brake unit.
- Remove the screw (a) retaining the tension unit and the nut (b), and remove the tension unit.
- Remove the ribbed belt.
- Remove three fastening screws shown in Fig. 2-6 and remove the capstan motor.

CAUTION:

Restrain the capstan motor as the three screws are removed, since an un-restrained motor may damage other parts of the deck. When performing removal or installation of the capstan motortake care that the outside of the rotor's rim is not greased.(Refer to Fig. 2- 5.) If greasy components are attached on the outside of the rotor's rim, wipe them off with a dry cloth because they may cause defects during special effects playback.

2-6-2 Installation (Refer to Fig. 2-5, 2-6.)

- Fasten the motor with three fastening screws.(Refer to Fig. 2-6.)
- Install the ribbed belt.
- Install the tension unit to the main plate with the screw (a) and nut (b).
- Fasten the capstan brake spring to the tension unit and capstan brake unit.
- Connect the flat cable.

2-7 Loading Motor

2-7-1 Removal (Refer to Fig. 2-7-1, 2-7-2.)

- Set the VCR to the eject mode.
- Unscrew the humidity sensor assembly fastening screw (a) and remove the humidity sensor assembly. (Refer to Fig. 2-7-1.)
- Disconnect the wires from the loading motor.
- Remove two stoppers securing the motor and the motor holder plate. (Refer to Fig. 2-7-2.)
- Slide the motor and motor holder plate away, and then raise them to remove.
- Unscrew two screws and detach the motor holder plate from the motor.
- Disconnect the coupling from the motor.

2-7-2 Installation (Refer to Fig. 2-7-1~2-7-3.)

- Fasten the coupling to a new loading motor. (Refer to Fig. 2-7-3.)
- Fasten the motor holder plate to the motor with two screws.
- Place the motor and motor holder plate in the motor holder at the rear of the deck.
- Turn the motor shaft so that the coupling on the loading motors matches the worm gear of the motor holder. Slide the loading motor forward and secure it with the stoppers.
- Solder the leads to the loading motor. (Brown lead wire to the positive terminal and red lead wire to the negative terminal.)
- Fasten the humidity sensor assembly with the fastening screw (a).(Refer to Fig. 2-7-1.)

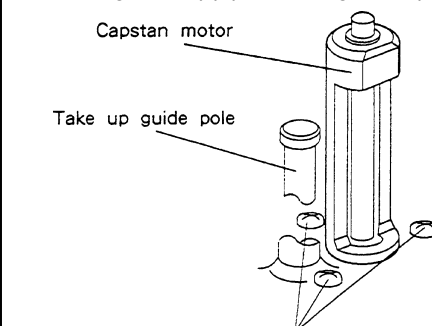


Fig. 2-6 Capstan motor fastening screws

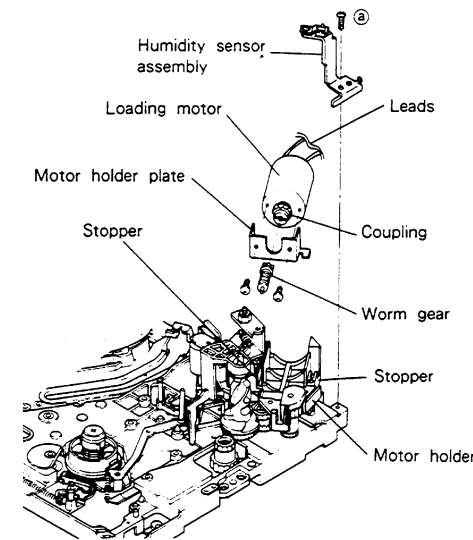


Fig. 2-7-1

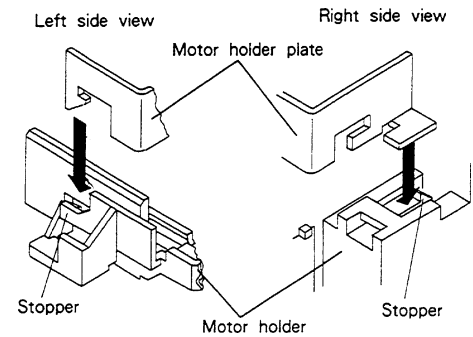


Fig. 2-7-2

2-8 Pinch Roller

2-8-1 Removal (Refer to Fig. 2-8-1, 2-8-2.)

- Set the VCR to the eject mode.
- Remove the pinch roller arm cap and the grip ring which secures the pinch roller arm assembly.
- Pull the pinch roller arm assembly upwards to remove.
- Remove the pinch roller cap from the pinch roller arm, and remove the pinch roller. (Refer to Fig. 2-8-2.)

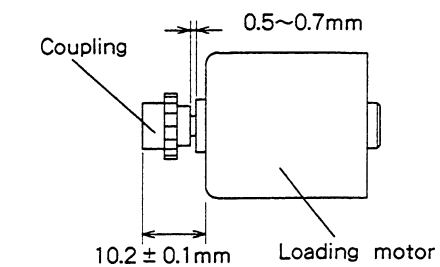


Fig. 2-7-3

2-8-2 Installation (Refer to Fig. 2-8-1, 2-8-2.)

- Assemble the pinch roller cap and the pinch roller to the pinch roller arm by exercising care with the installation angle of the pinch roller cap and the marking of the Pinch Roller. (Refer to Fig. 2-8-2.)
- Assemble the pinch roller assembly to the shaft on the main plate.
- Secure the pinch roller arm assembly with the pinch roller arm cap and the grip ring.

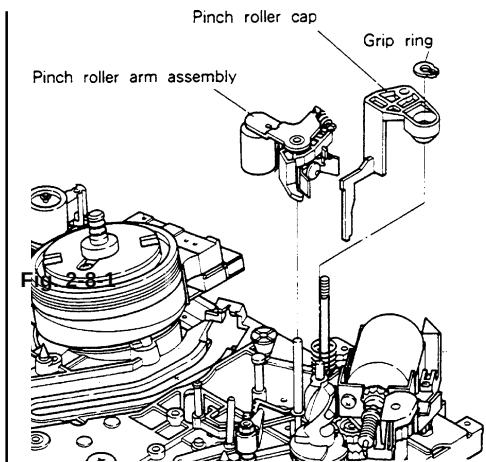


Fig. 2-8-1

2-9 Mode Switch

Note: Replace the mode switch with the VCR in the eject mode.

2-9-1 Removal (Refer to Fig. 2-9-1)

- Unsolder the five soldered joints of the mode switch from the deck PCB.
- Unfasten two catches fastening the switch to the deck PCB assembly. (Exercise care as the catches may be broken off.)
- Remove the mode switch slowly while assuring that the soldered joints are all unsoldered.

2-9-2 Installation (Refer to Fig. 2-9-1,2-9-2.)

- Line the matching marks of the mode switch. (Refer to Fig. 2-9-2.)
- Finally adjust the mode switch so that continuity at each terminal shall be as given in the illustration.
- Fasten the switch to the deck PCB with care so that the switch shall not turn, and secure with two catches.(Refer to Fig. 2-9-1.)
- Solder the five terminals which connect the mode switch to the deck PCB assembly.

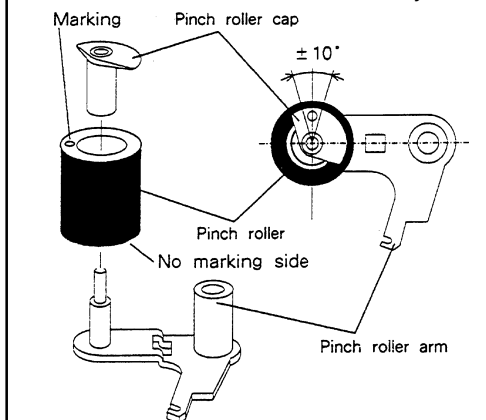


Fig. 2-8-2

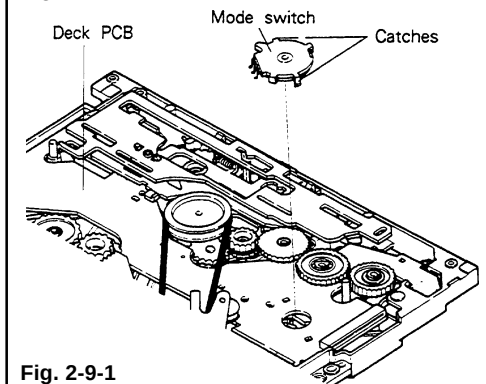


Fig. 2-9-1

Mechanical Adjustments Cont'd

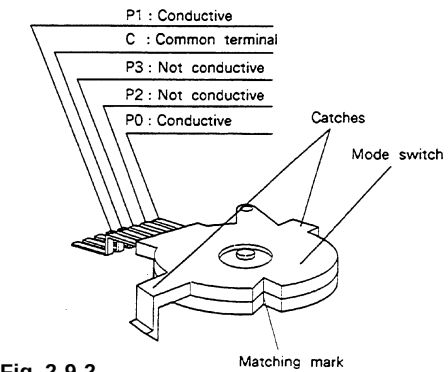


Fig. 2-9-2

2-10 Supply Reel Disk

2-10-1 Removal (Refer to Fig. 2-10-1~2-10-3.)

- Remove the cassette housing as in Para. 2-1-1.
- Unscrew the screw (a) which fastens the T band holder.
- Unfasten the catch of the T band holder from the main plate with a small screw driver etc. as shown in Fig. 2-10-2. Raise and remove the T band holder with care not to score or dirty the tension brake belt.
- Detach the tension spring from the tension arm and the tension lever.
- Remove the grip ring (b) which secures the tension arm. Raise the tension arm upward to remove it from the shaft.
- Detach the tension regulation spring S from the tension regulating arm S and the tension lever.
- Detach the safety lever spring from the safety lever and the tension lever.

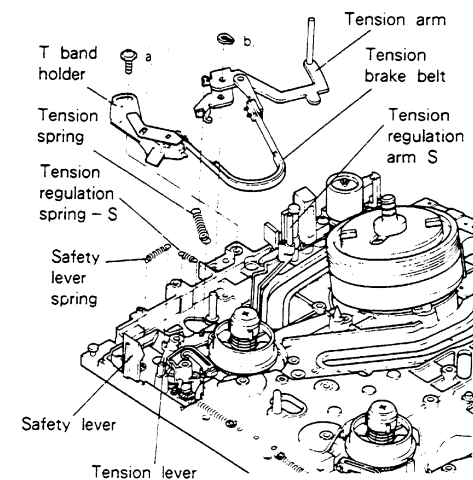


Fig. 2-10-1

- Raise the tension lever avoiding the main brake S and remove the lever from the shaft. (Refer to Fig. 2-10-3.)
- Raise the tension regulation arm S and remove it from the shaft.
- While turning the main brake S slightly clockwise to separate the brake from the supply reel disk, and raise the supply reel disk to remove it from the shaft. (Refer to Fig. 2-10-3.)

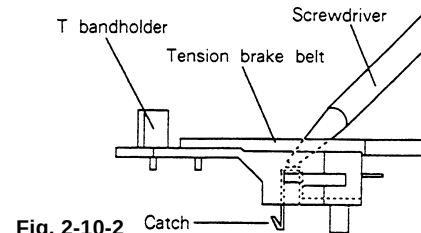


Fig. 2-10-2

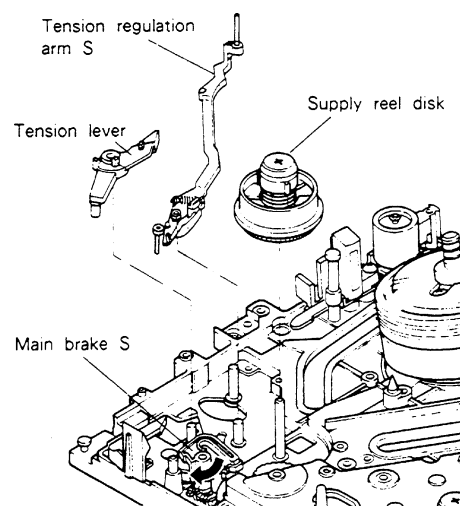


Fig. 2-10-3

2-10-2 Installation (Refer to Fig. 2-10-4~2-10-7.)

- Turn the main brake S slightly clockwise to separate it from the supply reel disk shaft, and mount the supply reel disk on the shaft so that the reel gear meshes with the gear of the supply reel disk.
- Assemble the tension regulation arm S to the shaft.
- Assemble the tension lever to the shaft avoiding the main brake S.
Note: Install the tension lever so that the pin at the lower part of the lever shall be in front of the slot in the main plate (viewing the front).
- Fasten the safety lever spring to the safety lever and the tension lever.
- Fasten the tension regulation spring S to the tension regulation arm S and the tension lever.

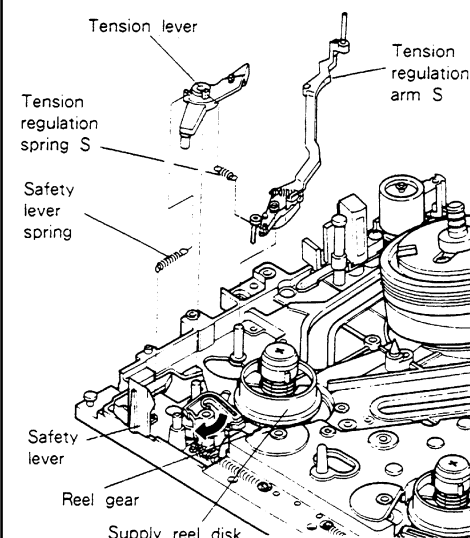


Fig. 2-10-4

- Assemble the tension arm to the shaft and secure the arm with the grip ring (b). (Refer to Fig. 2-10-5.)
- Fasten the tension spring to the tension arm and the tension lever. (Refer to Fig. 2-10-5.)
- Assemble the T band holder to the main plate with care not to score or dirty the tension brake belt, and secure the holder with the screw (a) lightly. (Refer to Fig. 2-10-5.)
Note: In the assembly of the T band holder, make certain that the hook of the holder positively engages with the reverse side of the main plate. If the hook is difficult to engage with the main plate, push the hook lightly with a small screw driver etc. (Refer to Fig. 2-10-2.)

- Separate the main brake S and the tension regulation arm S from the supply reel disk and make certain that the disk turns freely.
- Place the reel disk adjusting jig (Part Number 859C342020) in the reference position on the main plate. (Refer to Fig. 2-10-6.)
- Slowly turn the jig about the point A and make sure that the height of the supply reel disk flange shall agree with the point B on the supply disk adjusting side of the jig (marked SP). (Refer to Fig. 2-10-7.)
- If the height of the disk is not satisfactory, hold the disk so that it does not turn, and turn the height adjusting screw at the top of the disk to adjust the height. (Refer to Fig. 2-11-3.)
- Turn the screw clockwise if the measured height is low.
- Turn the screw counterclockwise if the measured height is high.
- On completion of adjustment, lock the height adjusting screw by burning it with the tip of the hot iron.
- Install the cassette housing as in Para. 2-1-2.
- Adjust back tension and tension pole position as outlined in Para. 3-1.

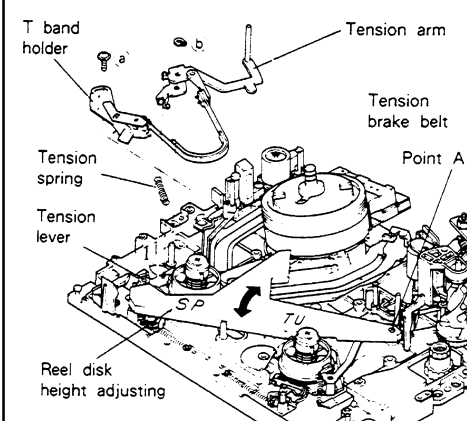


Fig. 2-10-5

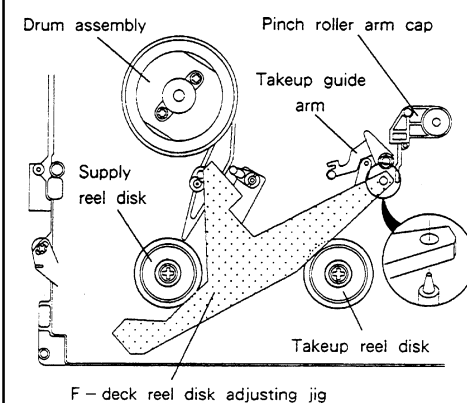


Fig. 2-10-6

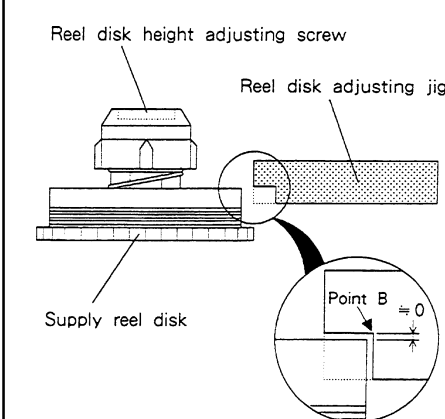


Fig. 2-10-7

2-11 Takeup Reel Disk

2-11-1 Removal (Refer to Fig. 2-11-1.)

- Remove the cassette housing as in Para. 2-1-1.
- Detach the spring RS and the tension regulation spring T from the tension regulation arm T and the lever RS.
- Remove the cut washer which fastens the tension regulation arm T.
- Turn the takeup guide arm slightly clockwise and raise the tension regulation arm T to remove it from the shaft.
- Turn the main brake slightly counter-clockwise to separate the brake from the takeup reel disk and raise the disk upwards to remove it from the shaft.

2-11-2 Installation (Refer to Fig. 2-11-2, 2-11-3.)

- Turn the main brake T slightly counter-clockwise to release the takeup reel disk shaft. Slip the takeup reel disk onto the shaft so that the gear of the takeup reel shall mesh with the reel gear.
- Turn the takeup guide arm slightly clockwise and install the tension regulation arm T to the shaft. Secure the arm with a cut washer.
- Fasten the tension regulation spring T and the spring RS to the tension regulation arm T and the lever RS.
- Separate the main brake T and the tension regulation arm T from the takeup reel disk and make certain that the takeup reel disk turns freely.
- Place the reel disk adjusting jig (Part Number 859C342020) in the reference position on the main plate. (Refer to Fig. 2-10-6.)
- Turn the jig slowly about the point A towards the takeup reel disk to make certain that the height of the disk flange agrees with the point B on the takeup side of the jig (marked TU). (Refer to Fig. 2-11-3.)
- If the height of the disk is not satisfactory, hold the disk so that it shall not turn, and turn the height adjusting screw at the top of the disk to adjust the height. (Refer to Fig. 2-11-3.)
- Turn the screw clockwise if the measured height is low.
- Turn the screw counterclockwise if the measured height is high.
- On completion of height adjustment, lock the adjusting screw by burning it with the tip of the hot iron.
- Install the cassette housing as in Para. 2-1-2.

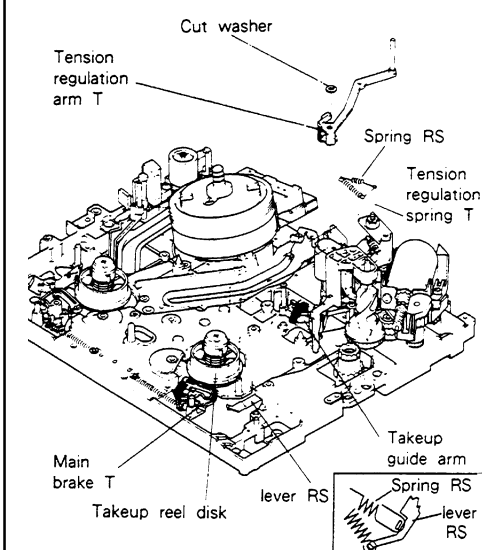


Fig. 2-11-1

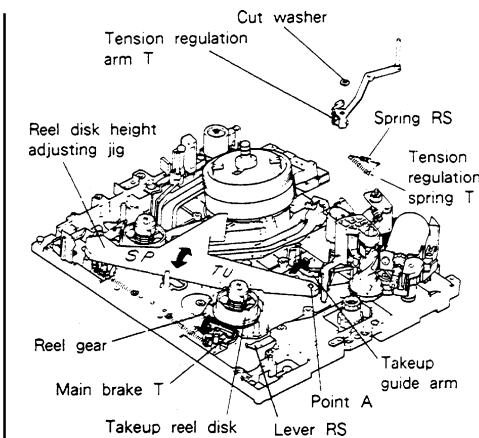


Fig. 2-11-2

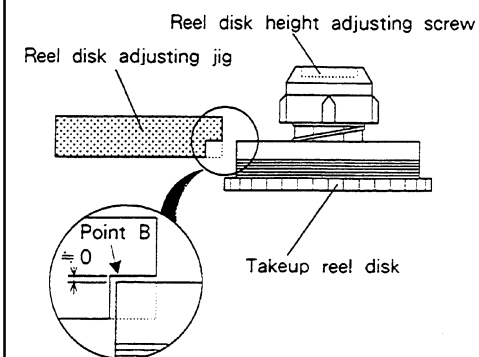


Fig. 2-11-3

2-12 A/C Head

2-12-1 Removal (Refer to Fig. 2-12-1, 2-12-2.)

- Disconnect the connector from the A/C head PCB.
- Remove the nut which fastens the A/C head assembly.
- Raise upwards and remove the A/C head assembly from the shaft by paying attention to the A/C arm spring which turns the A/C head assembly clockwise.
- Remove three A/C head fastening screws (a), (b) and (c) and the A/C spring shown in Fig. 2-12-2, and remove the A/C head from the A/C arm.
- Unsolder the A/C head PCB from the A/C head. (Refer to Fig. 2-12-2.)

2-12-2 Installation (Refer to Fig. 2-12-1~2-12-3.)

- Solder the A/C head PCB to the A/C head. (Refer to Fig. 2-12-2.)
- Fasten the A/C head to the A/C arm with three screws (a), (b), and (c) and the A/C spring.
Note: Install the A/C head to the A/C arm so that the base surface of the A/C head shall be parallel to the A/C arm, and their spacing and the A/C head installation screw (c) height shall be as specified in Fig. 2-12-3.
- Assemble the A/C head assembly to the shaft while turning the A/C arm spring counter-clockwise about 60°. (Refer to Fig. 2-12-1.)
- Tighten the A/C head assembly fastening nut so that the base surface of the A/C head shall be about 7mm above the main plate surface. (Refer to Fig. 2-12-3.)
- Plug in the connector to the A/C head PCB. (Refer to Fig. 2-12-1.)
- Conduct the A/C head adjustment and the phase adjustment as outlined in Para. 3-3 and 3-4.

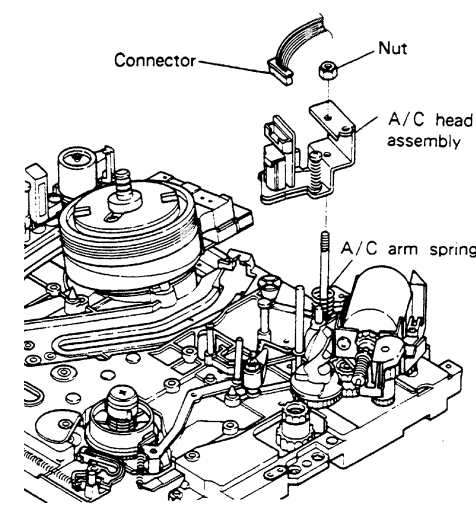


Fig. 2-12-1

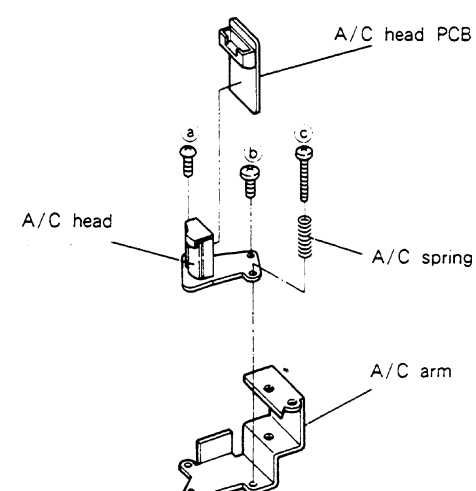


Fig. 2-12-2

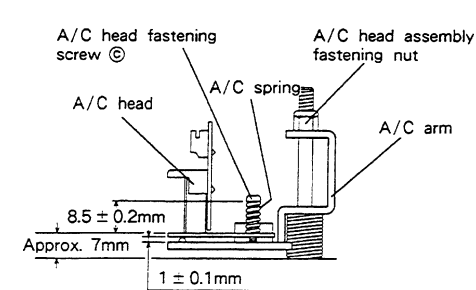


Fig. 2-12-3

2-13 Take Up Guide Arm

2-13-1 Removal (Refer to Fig. 2-13-1.)

- Set the VCR in the eject mode.
- Remove the pinch roller arm assembly. (Refer to Para. 2-8 "Pinch Roller.")
- Raise and separate the pinch roller cam and the TU-G gear arm from the shaft at the same time.
- Remove the takeup guide arm fastening nut. Raise and separate the takeup guide arm from the shaft with care not to lose the TU-G spring.

2-13-2 Installation (Refer to Fig. 2-13-1~2-13-3.)

- Install the TU-G spring and the takeup guide arm so that one end of the TU-G spring is fastened to the takeup guide arm and the other end is fastened to the hook of the main plate. Secure them with the fastening nut temporarily.
- Place the reel disk adjusting jig (for the F deck) in the reference position on the main plate (Refer to Fig. 2-10-6). Tighten the

Mechanical Adjustments Cont'd

- takeup guide arm fastening nut so that the lower flange of the takeup guide arm is level with point B of the height adjusting jig (for the E deck). (Refer to Fig. 2-13-2.)
- C. Turn the takeup tension lever fully clockwise as shown in Fig. 2-13-1.
- D. Line the matching mark on the gear arm and beginning of gear section on the takeup guide arm, and line the matching mark on the pinch roller cam and Center of gear on the joint gear as shown in Fig. 2-13-3, and install the pinch roller cam and the TU-G gear to the shaft at the same time.
- E. Assemble the pinch roller assembly to the shaft on the main plate.
- F. Secure the pinch roller arm assembly with the pinch roller arm cap and the grip ring.

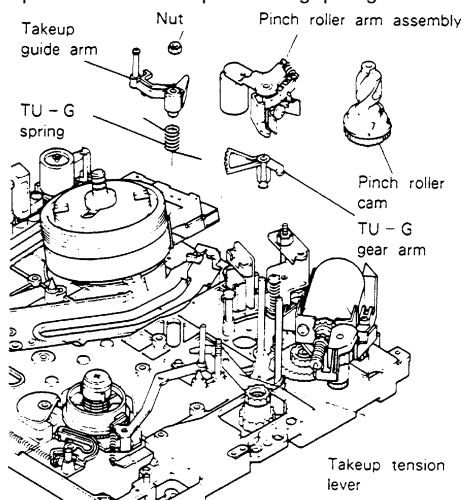


Fig. 2-13-1

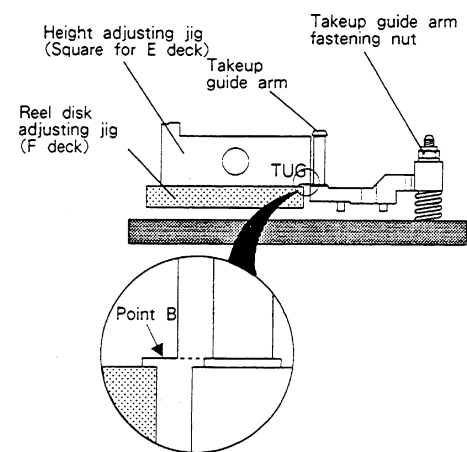


Fig. 2-13-2

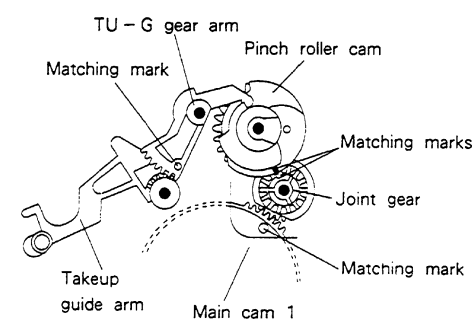


Fig. 2-13-3

2-14 Deck PCB (Printed Circuit Board)

2-14-1 Removal (Refer to Fig. 2-14-1, 2-14-2.)

- A. Detach the capstan brake spring from the tension unit and the capstan brake unit.
- B. Remove the screw (d) retaining the tension unit and the nut (i), and remove the tension unit.
- C. Remove the ribbed belt from the bottom of the deck. (Refer to Fig. 2-5.)
- D. Detach two grip rings (f) as shown in Fig. 2-14-1 and remove the loading gear arm.
- E. Unsolder the terminals of the FE head.
- F. Unfasten the catches and remove the F/L gear 2, 3 and 4. (Refer to Fig. 2-14-2.)
- G. Remove grip ring (g) and cut washer (h), and unfasten three catches shown in Fig. 2-14-2 to remove the cam plate B. (Refer to Fig. 2-14-1.)
- H. Unscrew four fastening screws (a) to (c) and (e) and remove the deck PCB. (Refer to Fig. 2-14-1.)

2-14-2 Installation (Refer to Fig. 2-14-1~2-14-2.)

- A. Make certain that the mode switch is set to the eject position. (Refer to section 2-9.) Fasten the deck PCB with four screws and solder the FE head terminals. (Refer to Fig. 2-14-1.)
- Note:** The safety lever is normally held leftward with a spring. Pull the safety lever forwards and install the deck PCB.
- B. Install the cam plate B by paying attention to the pin (a) to (g) positions shown in Fig. 2-14-2, and secure the plate with three catches, grip ring (g) and cut washer (h).
- C. Line the matching mark on the loading arm T and that on the loading gear arm as shown in Fig. 2-14-2, and assemble the loading gear arm so that the pin of the loading gear arm enters the groove of the main cam 2. Secure the loading gear arm with two grip rings (f).
- D. Assemble the F/L gear 2, 3, and 4 to the shafts.
- E. Install the ribbed belt. (Refer to Fig. 2-5.)
- F. Install the tension unit to the main plate with the screw (d) and nut (i).
- G. Fasten the capstan brake spring to the tension unit and the capstan brake unit. (Refer to Fig. 2-14-1.)

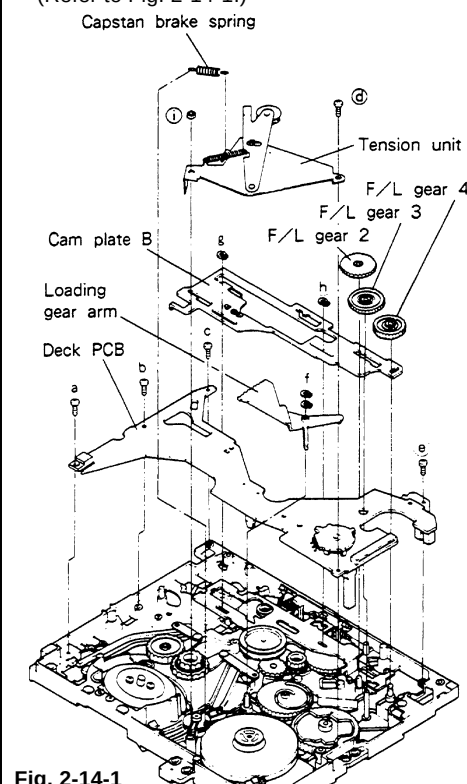


Fig. 2-14-1

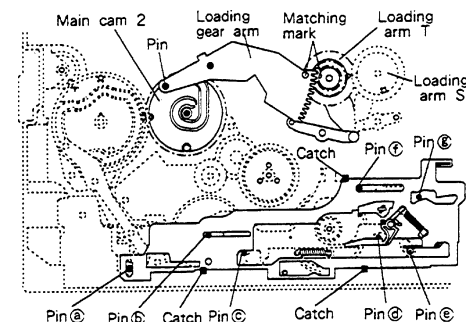


Fig. 2-14-2

2-15 Positioning and Installation Sequence of Parts Around Main Cam 1 (Bottom Side of Deck) (Refer to Fig. 2-15-1~2-15-6.)

- Note:** Set the VCR to the eject mode to install the main cam 1 and its peripheral parts.
- A. Line the positioning hole in the lever RS and that of the main plate, and assemble the lever RS to the shaft.
- B. Line the positioning hole in the lever C with that of the main plate, and assemble the lever C to the shaft.
- C. With care not to move the lever RS and lever C, assemble the main cam 1 to the shaft by lining the matching mark of the joint gear with the positioning hole of main plate. Secure the main cam 1 with the grip ring. (Refer to Fig. 2-15-2.)
- Note:** The pins of the lever RS and the lever C enter the groove of the main cam 1 when the levers are lined with the positioning holes. Make certain that the pins of the levers enter the groove of the main cam 1.
- D. Assemble the thrust washer to the pin (c) shown in Fig. 2-15-2, and install the cam plate C so that the corresponding positions of the plate match the pins (a) to (g).
- E. Fasten the cam spring C to the cam plate C and the cam plate holder. (Refer to Fig. 2-15-2.)
- F. Assemble the lever B to the shaft so that the pin of the lever shown in Fig. 2-15-3 shall enter the groove of the main cam 1. Secure the lever with a grip ring.
- G. Line the positioning hole of the F/L idler lever with that of the main plate. (Refer to Fig. 2-15-3.)
- Note:** The pin of the F/L idler lever enters the groove of the main cam 2 when the positioning hole of the F/L idler lever is aligned. Make certain that the pin of the lever enters the groove of the main cam 2.
- H. Line the matching mark of the main cam 2 with that of the main cam 1, and also the positioning hole of the main cam 2, and assemble the main cam 2 to the shaft. (Refer to Fig. 2-15-3.)
- Note:** Make certain that the pin of the F/L idler lever correctly enters in the groove of the main cam 2.

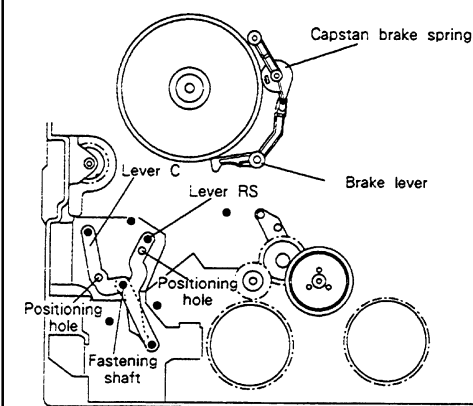


Fig. 2-15-1

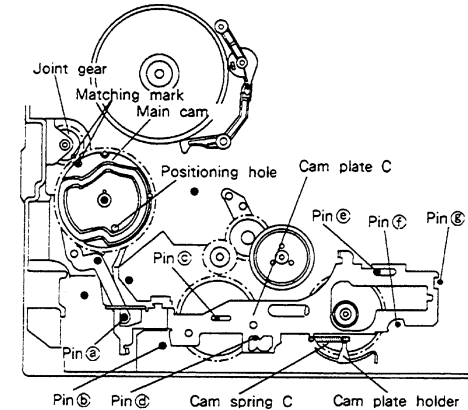


Fig. 2-15-2

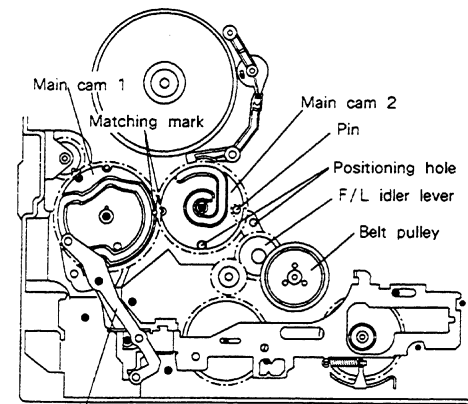


Fig. 2-15-3

- I. Make certain that the mode switch is in the eject position. Fasten the deck PCB assembly with five screws and solder the FE head terminals. (Refer to Fig. 2-14-2 and 2-14-1.)
- Note:** The safety lever is normally held in the leftward position by the spring. Pull the lever forwards and install the deck PCB assembly.
- J. Install the cam plate B so that the plate shall match the pins (a) to (g) as shown in Fig. 2-15-4, especially the pin (e), and secure the plate with three clamps, cut washer (pin b) and grip ring (pin f).
- K. Line the matching mark of the loading arm T with that of the loading gear arm as shown in Fig. 2-15-4, and assemble the loading gear arm to the shaft so that the pin of the loading gear arm shall enter the groove of the main cam 2. Secure the arm with two grip rings (f). (Refer to Fig. 2-15-5.)
- L. Assemble the F/L gear 2, 3, and 4 to the shafts as shown in Fig. 2-15-5.
- M. Install the ribbed belt. (Refer to Fig. 2-5.)
- N. Fasten the tension regulation spring T and the spring RS to the tension regulation arm T and the lever RS from the top side of the deck. (Refer to Fig. 2-11-1.)
- O. Install the tension unit to the main plate with the screw (d) and the nut (i).
- P. Fasten the capstan brake spring to the tension unit and the capstan brake spring. (Refer to Fig. 2-15-5.)

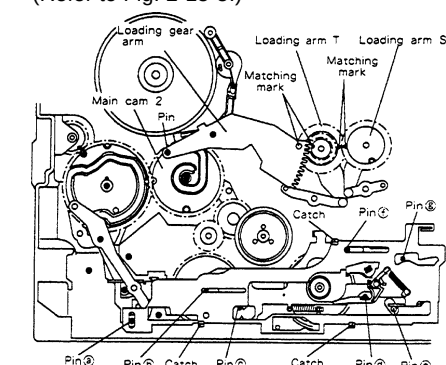


Fig. 2-15-4

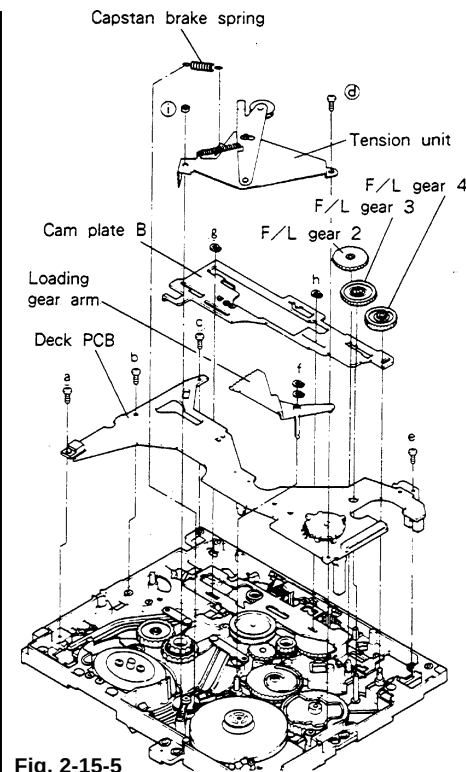


Fig. 2-15-5

2-16 Supply and Takeup Guide Rollers

2-16-1 Removal (Refer to Fig. 2-16.)

- A. Remove the cassette housing as in Para. 2-1-1.
- B. Loosen the set screw to such a degree as the guide roller turns lightly.
- C. Loosen the guide roller height adjusting screw located at the top of the guide roller by turning counterclockwise with the height adjusting screwdriver. Raise and remove the roller from the tape guide.

2-16-2 Installation (Refer to Fig. 2-16.)

- A. Make certain that the fastening thread section of a new guide roller is provided with a rubber ring.
- B. Set the new guide roller in the tape guide fastening hole.
- C. Turn the guide roller slowly clockwise till it becomes stiff.
- D. Turn further about 1/6 turns from a point where the guide roller becomes heavy, and return the roller about one turn counterclockwise.
- E. Again turn the guide roller slowly clockwise till it becomes heavy. Turn the roller further about 1/6 turn from the point where the roller becomes stiff.
- F. Secure the guide roller lightly with the set screw. Check and adjust the envelope as in Para. 3-2.

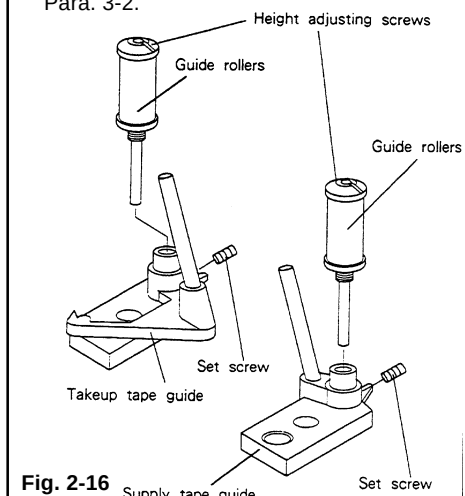


Fig. 2-16

2-17 Supply and Takeup Tape Guide Assemblies

Note: Refer to section 3-3-7 and 3-4-3 before replacing the supply or takeup tape guide assemblies.

2-17-1 Removal (Refer to Fig. 2-17-1~2-17-4.)

- A. Remove the cassette housing as in Para. 2-1-1.
- B. Remove the screw (a) retaining the holder belt unit, and remove the holder belt unit.
- C. Detach the capstan brake spring from the tension unit and the capstan brake unit.
- D. Remove the screw (d) retaining the tension unit and the nut (c), and remove the tension unit.
- E. Remove the ribbed belt. (Refer to Fig. 2-5.)
- F. Secure the tension arm and the tension regulation arm S with a rubber band etc. so as to separate them from the supply guide roller.

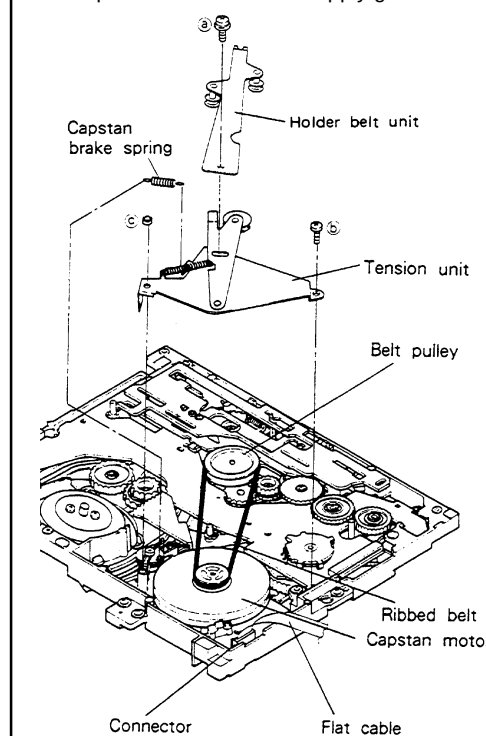


Fig. 2-17-1

- E. Remove the grip ring and remove the loading gear arm. (Refer to Fig. 2-17-2.)
- F. Turn the loading arm S and T to the loading position. (Refer to Fig. 2-17-2.)
- G. Unfasten the clamp shown in Fig. 2-17-3, and remove the loading arm S.
- H. Remove the loading arm T further in case of replacing the takeup guide assembly.
- I. Unfasten the clamp of the slider which secures the supply or takeup tape guide assembly, and remove the tape guide assembly and the slider from the main plate. (Refer to Fig. 2-17-4.)

2-17-2 Installation (Refer to Fig. 2-17-1~2-17-4.)

- A. Place a new tape guide assembly on the installation rail of the main plate and install the slider on the reverse side of the main plate so that the catch of the slider enters the fastening hole of the tape guide assembly.
- B. If the takeup tape guide is replaced, install the loading arm T at first. (Refer to Fig. 2-14-2.)
- C. Install the loading arm T so that the matching mark of the loading arm S is aligned with the matching mark of the loading arm T as illustrated in Fig. 2-17-2.
- D. Align the matching mark of the loading gear arm with that of the loading arm T, and

Mechanical Adjustments Cont'd

- assemble the loading gear arm to the shaft so that the pin of the loading gear arm enters the groove of the main cam 2. Secure the loading gear arm with two grip rings.
- E. Install the ribbed belt. (Refer to Fig. 2-5.)
- F. Install the tension unit to the main plate with the screw (b) and the nut (c).
- G. Fasten the capstan brake spring to the tension unit and the capstan brake unit.
- H. Install the holder belt unit to the main plat with the screw(a).
- I. Install the cassette housing as in Para. 2-1-2.

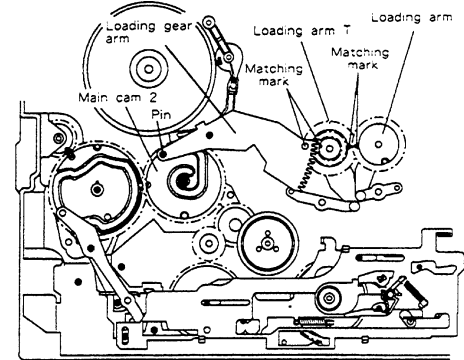


Fig. 2-17-2

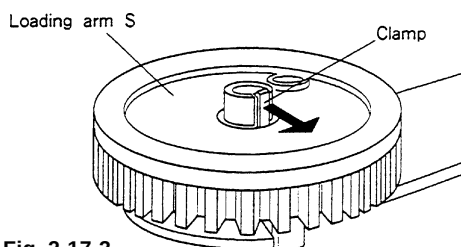


Fig. 2-17-3

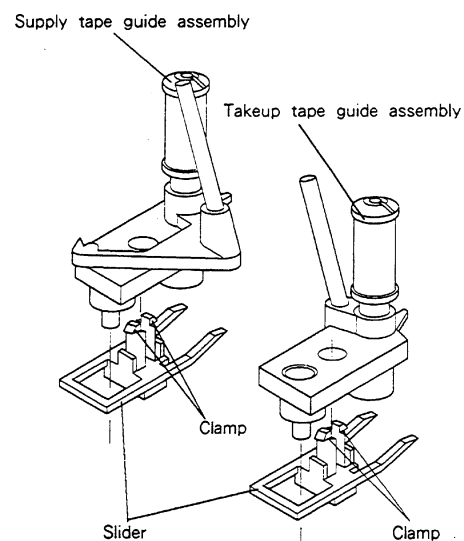


Fig. 2-17-4

3. Interchangeability Adjustment of Mechanism

Note 1: Tracking may need to be preset in the inter-changeability adjustment of the mechanism. Digital tracking should be preset. To preset, Set Normal tracking control (VR702) to center click stop position.

Note 2: The adjustment is conducted in the playback mode, using the stair step signal of the alignment tape, connect an oscilloscope to TP2A and external Trig, to TP2H, unless otherwise specified.

3-1 Adjustment of Back Tension and Tension Pole Position (Refer to Fig. 3-1.)

Run a blank tape for several minutes to break in the reel disks and the transport before beginning the adjustment.

- Set the back tension measuring jig and set the VCR to the playback mode.
 - When the running of the tape becomes steady, make certain that the tension arm check hole is within the M/P hole of the main plate ($0 \pm 0.5\text{mm}$) or the interval between the center of tension pole and the center of Supply guide pole is $2 \pm 0.5\text{mm}$.
 - If neither the center of Tension pole nor the tension arm check hole is in position, loosen the T band holder fastening screw lightly and move the T band holder so that the condition specified by the para.B is satisfied.
 - On completion of adjustment, tighten the T band fastening screw.
 - Make certain that the reading of the back tension measuring jig is $50 \pm 6\text{g-cm}$.
 - When the running of the tape is steady, check visually to make certain that the deflection of the Tension pole is 1 mm or less.
- Note:** Slight fluctuation of back tension may be tolerated, however if fluctuation exceeds 5g-cm, the reel disk etc. may be defective. Examine and correct the defect.

3-2 Check and Adjustment of Roller Unit Position (Refer to Fig. 3-2.)

- Supply D.C.12V to the connector CP of the Roller Unit, as shown in Fig.3-2
- Confirm that the lever of the roller unit is within the limits of the notch.
- Confirm that the roller turns with the drum.
- Open the connector CP.
- Confirm that the gap between the drum and the roller is over 1.5mm, and confirm the roller does not touch the shield cap of head amp PCB.
- If the results above item (A to E) are below standards, loosen two screws (a) and (b) as shown in Fig. 3-2, and turn the roller unit around the screw (b) in the direction of the arrows. And adjust again.
- After the adjustment fasten two screws (a) and (b).

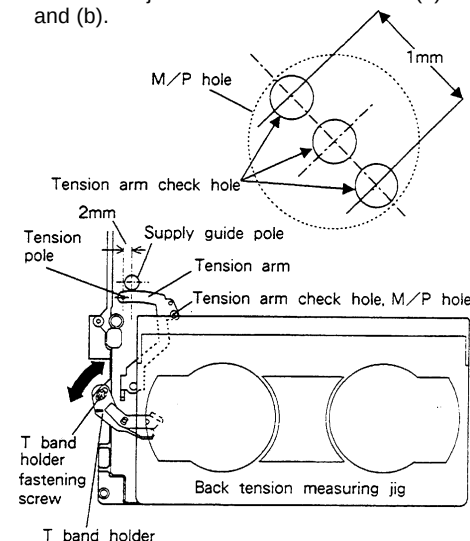


Fig. 3-1

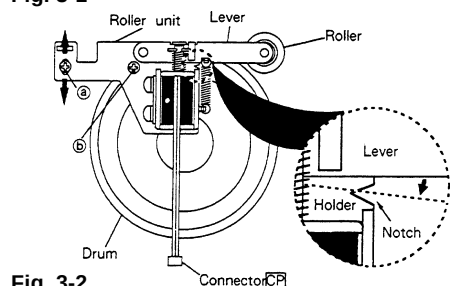


Fig. 3-2

3-3 Check and Adjustment of FM Envelope

3-3-1 Guide Roller Adjustment (Refer to Fig. 3-3-1.)

- Set the VCR to the playback mode.
- Preset tracking.
- Check if the FM waveform is flat like A shown in Fig. 3-3-1.
- Adjust the height of the supply guide roller as in 3-3-2 if the leading portion (the entry side of the drum) of the FM waveform is not flat like B or C. Adjust the height of the takeup guide roller as in 3-3-3 if the trailing portion (the exit side of the drum) is not flat like D or E.

3-3-2 Adjustment of Supply Guide Roller Height (Refer to Fig. 3-3-1, 3-3-2.)

- Loosen the set screw to such a degree as the supply guide roller turns lightly. (Refer to Fig. 3-3-2.)
- The supply guide roller is low if the leading portion (the entry side of the drum) of the FM waveform is like B, and high if like C. Adjust the height of the roller by turning the adjusting screw at the top of the roller so that the FM waveform shall be flat like A.
- Turn the adjusting screw counterclockwise if the roller is low.
- Turn the adjusting screw clockwise if the roller is high.
- Carry Out the coarse adjustment of phase as in 3-3-4.

3-3-3 Adjustment of Takeup Guide Roller Height (Refer to Fig. 3-3-1, 3-3-2.)

- Loosen the set screw to such a degree as the takeup guide roller turns lightly. (Refer to Fig. 3-3-2.)
- The takeup guide roller is low if the trailing portion (the exit side of the drum) of the FM waveform is like D, and high if like E. Adjust the height of the roller by turning the adjusting screw at the top of the roller so that the FM waveform shall be flat like A. Turn the adjusting screw counterclockwise if the roller is low. Turn the adjusting screw clockwise if the roller is high.
- On completion of height adjustment, adjust the azimuth and height of the A/C head as in 3-4-2.
- Coarsely adjust the phase as in 3-3-4.

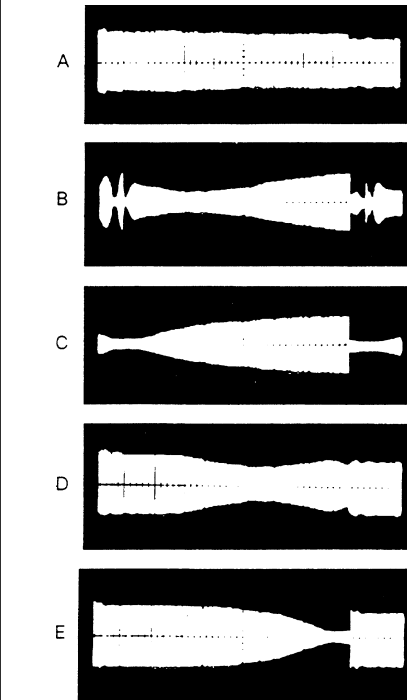


Fig. 3-3-1

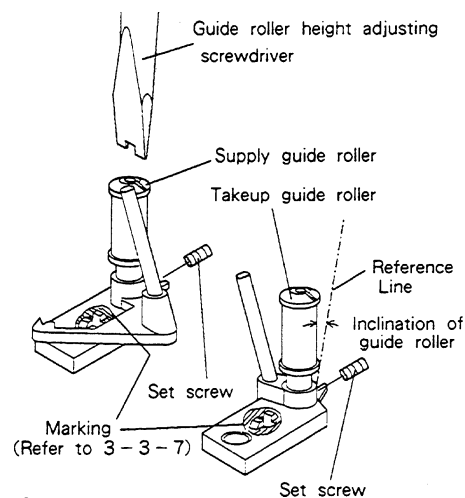


Fig. 3-3-2

3-3-4 Coarse Phase Adjustment (Refer to Fig. 3-3-3, 3-3-4.)

- Set the VCR to the playback mode.
- Preset tracking.
- Check the FM waveform after checking and adjusting the guide rollers.
- If the amplitude of the FM waveform is narrow like F because of out of phase, adjust the phase adjusting nut so that the amplitude of the FM waveform is maximum.

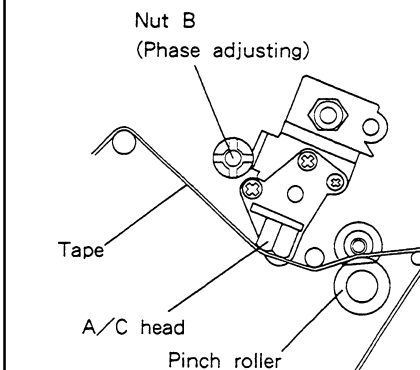


Fig. 3-3-3

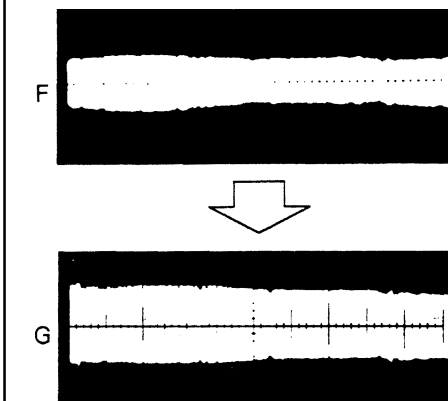


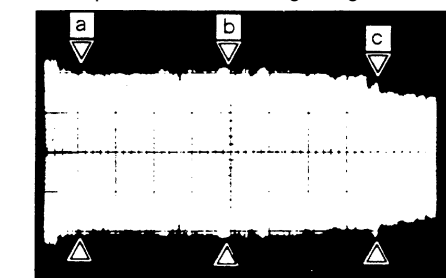
Fig. 3-3-4

3-3-5 Check of FM Waveform Flatness (Refer to Fig. 3-3-5.)

- Set the VCR to the playback mode.
- Set the tracking switch to the manual mode. Vary tracking and check if the amplitude changes while the waveform remains flat.
- Adjust tracking in the manual mode so that the amplitude is maximum, and adjust the oscilloscope so that the amplitude is '5' units on the scale of the oscilloscope.
- Adjust tracking so that the amplitude at the middle (around the point 'b') of the FM waveform is about 80% ('4' units on the scale of the scope) of the maximum amplitude. Make

certain that the amplitudes around the points 'a' and 'c' satisfy the requirements given in Fig. 3-3-5.

E. If there is deviation from the requirements, conduct the check and adjustment of the FM envelope as in 3-3 from beginning.



	Normal VHS mode	S-VHS mode
a	At least 2.8 of the scale	At least 3.2 of the scale
c	At least 2.8 of the scale	At least 3.2 of the scale

Fig. 3-3-5

3-3-6 Check 1: Tape Running Condition on Guide Rollers (Refer to Fig. 3-3-6.)

- Set the VCR to the playback mode.
- Visually check if there is a space between the tape and the lower flange of the supply and the take up guide roller.
- If not, replace the tape guide as in 3-3-7.
- If the supply tape guide is replaced, check the guide roller as in 3-3-1. If the take up tape guide is replaced, check the guide roller as in 3-3-3, and the waveform flatness as in 3-3-5
- Load and unload the tape several times to make certain that the flatness of the FM waveform does not change.
- If changes occur, check the A/C arm shaft for looseness. If not free, replace the A/C arm and adjust the audio/control head as in 3-4.

3-3-7 Replacement of Tape Guides

- Identify the Item Number of the tape guide to be replaced. This is done by observing the marking present on the die-cast portion of the tape guide base, and comparing that marking to Fig. 3-3-7.
- If the Item Number of the tape guide presently installed is a '2', replace the guide with an Item Number '1' guide. (Part No. 6358C59010)
- If the Item Number of the present tape guide is a '1', replace the guide with an Item Number '3' guide.
- If the Item Number of the present tape guide is a '3', replace the guide with other Item Number '3' guide.
- Once the tape guide is replaced, resume alignment starting with 3-3-1.

3-3-8 Check 2: Tape Running Condition on Guide Rollers

- Set the VCR to the playback mode.
- Press the head of the supply guide roller and the take up guide roller lightly, and release the roller. Check if the FM waveform is quickly restored to the previous level.
- If the FM waveform is not restored quickly, replace the tape guide as in 3-3-7.
- If the supply tape guide is replaced, check the guide roller as in 3-3-1. If the takeup tape guide is replaced, check the guide roller as in 3-3-3, and check the FM waveform as flatness as in 3-3-5
- If satisfactory, tighten the set screw of the guide roller on the supply side and the take up side.

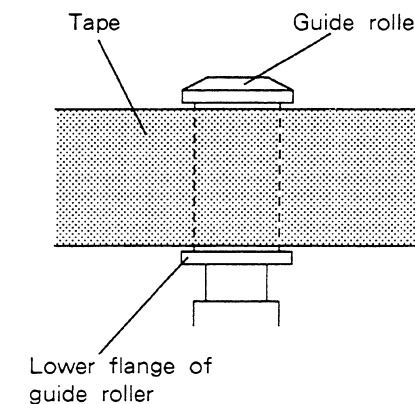


Fig. 3-3-6

Identification of Tape Guide Item Number (Example ; Parts No. 635B059010)

Item No.1	No marking
Item No.2	Marked with black magic marker
Item No.3	Marked with red magic marker

Fig. 3-3-7

3-4 Adjustment of Audio/Control Head

3-4-1 Adjustment of A/C Head Slant (Refer to Fig. 3-4-1.)

- Play back a blank tape.
- Turn the screw C slowly clockwise to crease the bottom edge of the tape slightly by the lower flange of the takeup guide pole.
- Turn the screw C slowly counterclockwise to eliminate the crease of the bottom edge of the tape.
- Turn the screw C slowly clockwise again and stop turning just before the tape is creased.

3-4-2 Adjustment of A/C Head Azimuth and Height (Refer to Fig. 3-4-1~3-4-3.)

- Using stair step signal of alignment tape, connect an oscilloscope to the audio output terminal and set the VCR to the playback mode.
 - Turn the nut A (height adjusting) and the screw B (azimuth adjusting) so that the audio output level shall be maximum.
 - Turn the A/C head counterclockwise and release it to make certain that the audio output level does not change.
 - If the level changes, check if the A/C arm shaft is loose. If not free, replace the A/C arm and adjust the slant of the A/C head as in 3-4-1 and the azimuth and height of the A/C head from beginning.
 - Apply a force lightly to the A/C head shaft in the direction of A and A' of the arrow shown in Fig. 3-4-3 to make certain that the audio output level remains at maximum level and does not change.
 - If the level changes, turn the nut A (height adjusting) so that the audio output level is maximum. Apply a force lightly to the A/C head shaft in the direction of B and B' of the arrow shown in Fig. 3-4-3 and adjust so that the sound output level is maximum.
 - Check the sound output level in the playback mode to make sure that the fluctuation of the level is less than 2dBp-p.
 - If the fluctuation exceeds 2dBp-p, adjust the slant of the A/C head and the azimuth and height of the head.
 - If this is still not satisfactory, replace the takeup tape guide as outlined in 3-4-3.
- Note:** In this case the tape guide should be replaced with a guide which has less inclination.

Mechanical Adjustments
Cont'd

J. On completion of the above adjustment, adjust phase as in 3-5.

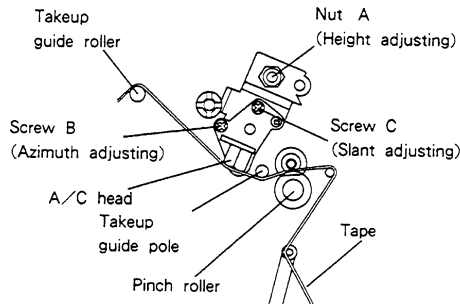


Fig. 3-4-1

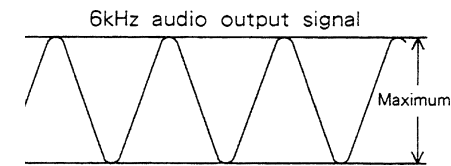


Fig. 3-4-2

Identification of Tape Guide Item Number
(Example ; Parts No. 635B060010)
Item No.

Item No.1	No marking
Item No.2	Marked with black magic marker
Item No.3	Marked with red magic marker

Fig. 3-4-3

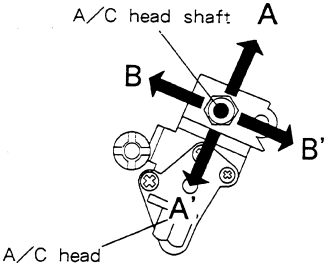


Fig. 3-4-4

3-4-3 Replacement of Tape Guides

- A. Identify the Item Number of the Tape Guide to be replaced. This is done by observing the marking present on the die-cast portion of the Tape Guide base, and comparing that marking to Fig. 3-4-4.
- B. If the Item Number of the tape guide presently installed is a '3', replace the guide with an Item Number '1' guide.
- C. If the Item Number of the present tape guide is a '1', replace the guide with an Item Number '2' guide.
- D. If the Item Number of the present tape guide is a '2', replace the guide with other Item Number '2' guide.
- E. Once the tape guide is replaced, resume alignment starting with 3-3-1.

3-5 Phase Adjustment (Refer to Fig. 3-5.)

- A. Set the VCR to the playback mode.
- B. Preset tracking.
- C. Turn the phase adjusting nuts to make the amplitude of the FM waveform maximum.
Note: Do not turn the phase adjusting nut exceeding one turn in either direction.
- D. Turn the A/C head counterclockwise and return to make sure that the amplitude of the FM waveform is the same as that before

- turning the head.
- E. If the amplitude changes, check the A/C arm shaft if loose. If not free, replace the A/C arm and adjust the A/C head as in 3-4 and the phase as in this section from beginning.
- F. Load and unload the tape several times to make certain that the amplitude of the FM waveform does not change.

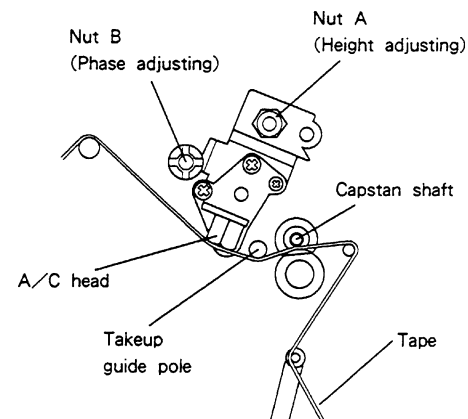


Fig. 3-5

3-6 Adjustment of Takeup Guide Arm Height
(Refer to Fig. 3-6.)

- A. Run a final portion of T-160 blank tape in the reverse search mode.
- B. Adjust the height of the takeup guide pole by turning the height adjusting nut so that the tape shall not be creased at the upper and the lower flange portion of the take up guide pole.
Note: Set the adjusting nut in the screwing-in direction. Do not turn the nut move than one turn in either direction.
- C. Eject the cassette tape and set to the reverse search mode again to make certain that the tape is not creased at the upper and the lower flange portion of the takeup guide pole.
- D. Set to the playback mode and be sure that the tape is not creased at the upper and the lower flange portion of the takeup guide pole.

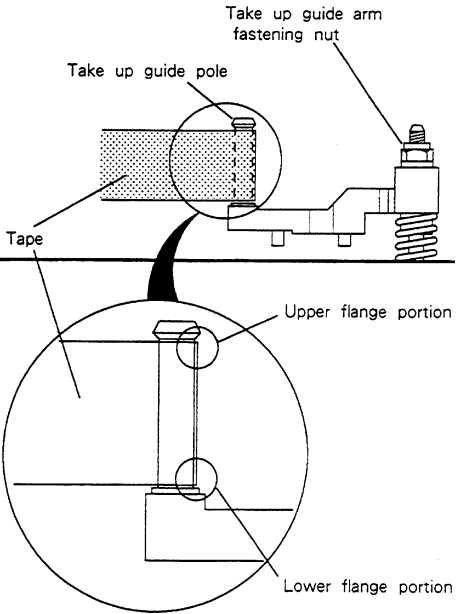
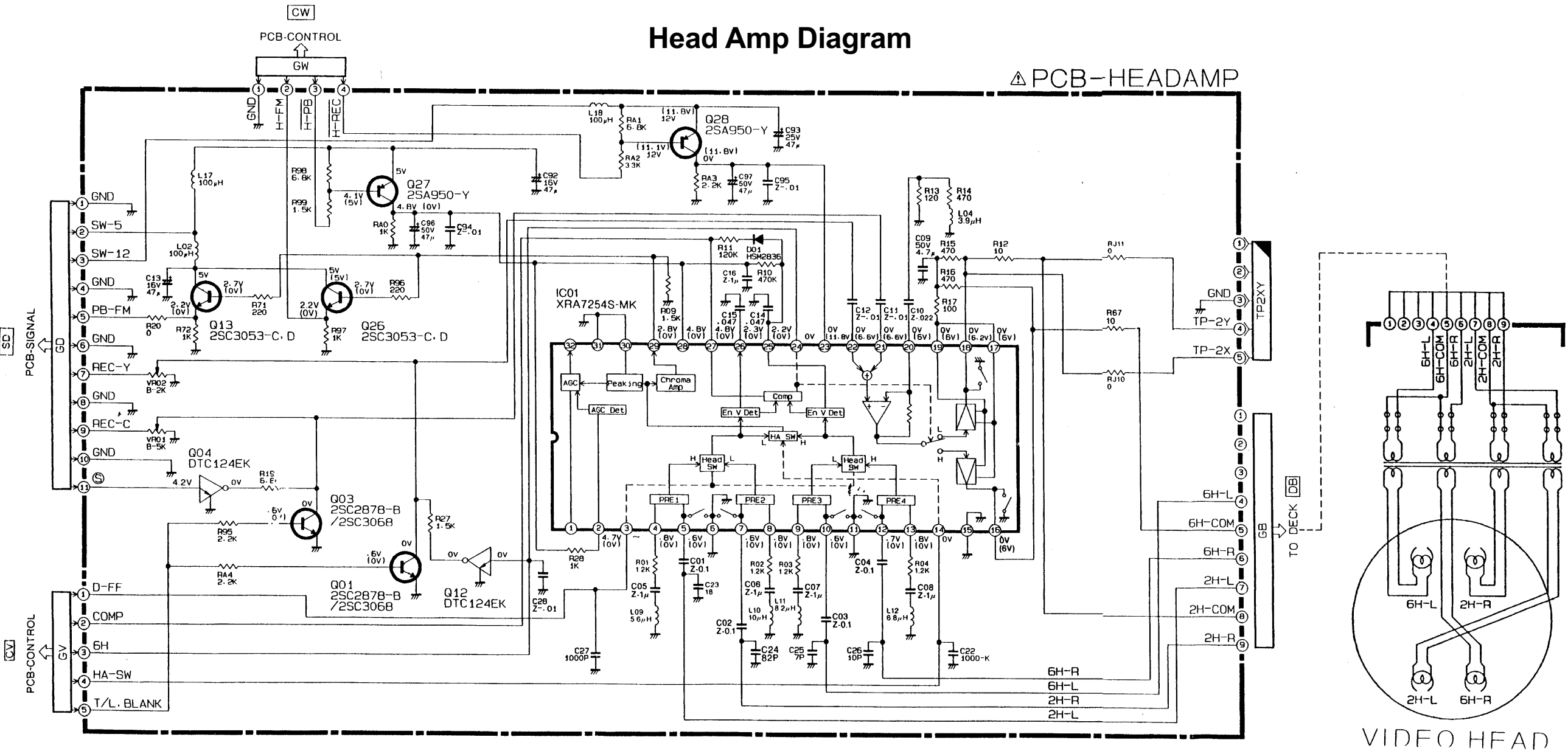
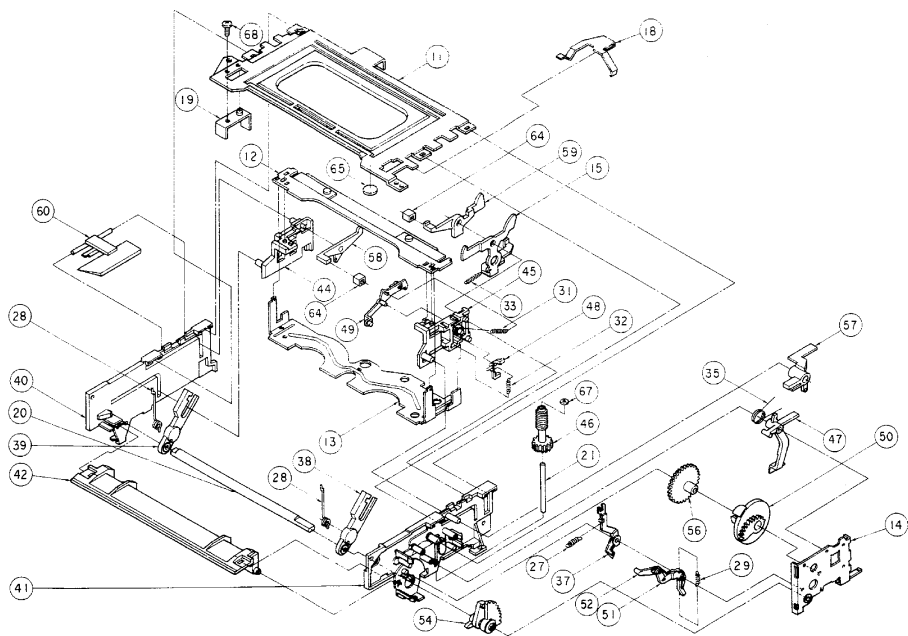


Fig. 3-6

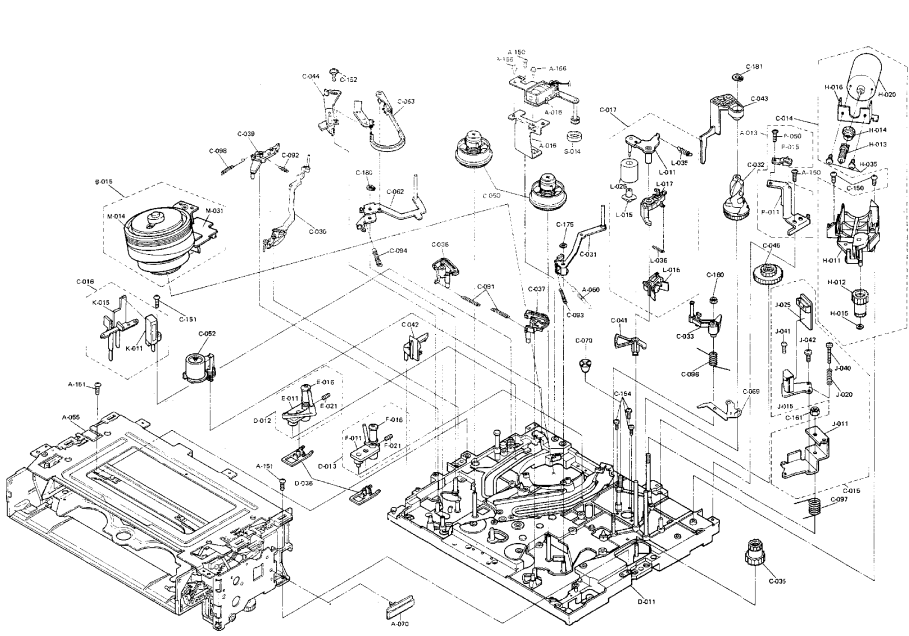
Head Amp Diagram



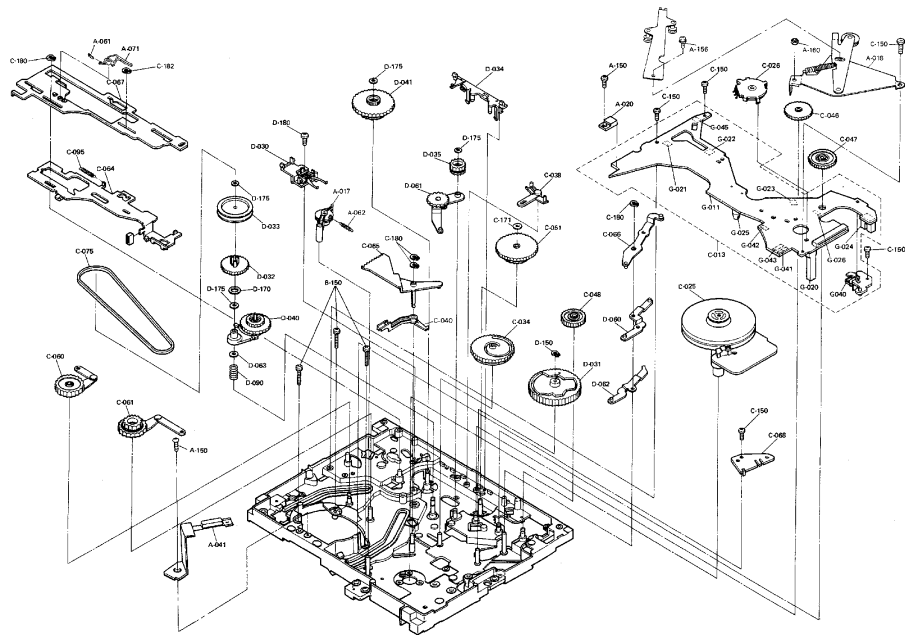
Exploded Parts View
 - Cassette Housing



Exploded Parts View
 - Deck Assembly 1



Exploded Parts View
 - Deck Assembly 2



Mechanical Parts

Item	Part No.	Description
(Cassette Housing)		
11	591B545010	PLATE-ROOF
12	592C758010	PLATE-UPPER
13	591B546010	PLATE-BOTTOM
14	591B542010	PLATE-SIDE-TU
15	592C851010	LEVER-LOOK-FL
18	596C150010	PLATE-EARTH
19	596C217010	PLATE-GUARD
20	531C134010	SHAFT-FL
21	631C135010	SHAFT-WORM
27		
28	572D301010	SPRING-FL
29	572D389010	SPRING-DOOR-SUB
31	572D304010	SPRING-OPENER-LID
32	572D305010	SPRING-JUT-FL
33	572D380010	SPRING-LEVER-LOCK
35	572D367010	SPRING-LEVER-SW
37		
38	541B315010	ARM-FL
39	641B315020	ARM-FL
40	641A110010	HOLDER-SIDE-SP
41	641A109010	HOLDER-SIDE-TU
42	641B306010	GUIDE-INSERT
44	641B309010	HOUSING-CASSETTE SP
45	641B307010	HOUSING-CASSETTE TU
46	621D513010	GEAR-WORM-FL
47	621D514010	LEVER-SW-FL
48	621D515010	JUT
49	641C794010	OPENER-LID-CAS
50	541C793010	GEAR-DRIVE
51	641C897010	ARM-FL-DOOR-A
52	641C898010	ARM-FL-DOOR-B
54	541C858010	ARM-LOCK
56	641C814010	GEAR-W-H-F/L
57	641C857010	LEVER-PICK-GAS
58	621D585010	LEVER-CAS-SP
59	621D586010	LEVER-CAS-TU
60	641C878010	STOPPER-SF-FL
64	642D494010	RUBBER-FL
65		
67	55C20001040	WASHER-THRUST
68		SCREW 2. 6-5
(Deck Assembly)		
B-015	948B231080	ASSY-DRUM
M-014	928B943005	ASSY-UPPER-DRUM
M-031	288P088010	MOTOR-DRUM M570
D-011	948A071030	ASSY-MAIN-PLATE
D-012	948D018010	ASSY-TAPE-GUIDE-S
D-012	948D018020	ASSY-TAPE-GUIDE-S
D-012	948D018030	ASSY-TAPE-GUIDE-S
E-011	635B059010	TAPE-GUIDE-S

Mechanical Parts

Item	Part No.	Description
E-011	635B059020	TAPE-GUIDE-S
E-011	635B059030	TAPE-GUIDE-S
E-016	522B031010	GUIDE-ROLLER
E-021	569D197020	SET-SCREW-F M3X0. 5-4
D-013	948D019010	ASSY-TAPE-GUIDE-T
D-013	948D019020	ASSY-TAPE-GUIDE-T
D-013	948D019030	ASSY-TAPE-GUIDE-T
F-011	635B060010	TAPE-GUIDE-T
F-011	635B060020	TAPE-GUIDE-T
F-011	635B060030	TAPE-GUIDE-T
F-016	522B031010	GUIDE-ROLLER
F-021	569D197020	SET-SCREW-F M3X0. 5-4
D-036	621D522010	SLIDER
C-014	928D031010	ASSY-LOAD-MOTOR
H-011	641B313010	HOLDER-MOTOR
H-012	641C783010	GEAR-WHEEL
H-013	641C801010	GEAR-WORM
H-014	621D525010	COUPLING
H-015	552C007030	CUT-WASHER 2. 5
H-016	596D157010	PLATE-HOLDER-M
H-020	288D025010	MOTOR-LOADING M571
H-035	650P300030	SCREW-F-FE-PAN M3X0. 5-3
C-015	928D032010	ASSY-AC-HEAD
J-011	592C760010	ARM-AC
J-015	460P092010	HEAD-AC T370
J-020	570D593010	SPRING-AC
J-025	215C376010	PCB-AC-AF
J-040	650P261040	SCREW-F-FE-PAN M2.6X0. 45-14
J-041	669D227010	SCREW-TS M2. 6X6
J-042	669D206030	SCREW
C-016	928D033020	ASSY-FE-HEAD
K-011	460P055030	HEAD-FE T371
K-015	641C870010	HOLDER-FE
C-017	948D020010	ASSY-ARM-PINCH
L-011	591B536010	ARM-PINCH
L-015	621D523010	CAP-ROLLER
L-016	641C797010	LEVER-CAM-PINCH
L-017	641C798010	LEVER-ARM-PINCH
L-025	522D174010	ROLLER-PINCH
L-035	572D314010	SPRING-PINCH
L-036	572D315010	SPRING-CAM-PINCH
C-030	641B368010	ARM-TENS-REG-S2
C-031	591B551010	ARM-TENS-REG-T
C-032	641B314020	CAM-PINCH
C-033	635B068010	ARM-TU-G
C-035	641C782010	GEAR-JOINT
C-036	641C791010	BRAKE-MAIN-S
C-037	641C792010	BRAKE-MAIN-T
C-039	641C796010	LEVER-TENS
C-041	641C991010	ARM-GEAR-TU-G2
C-042	641C804010	LEVER-REC-SAFETY
C-043	641C806010	CAP-ARM-PINCH

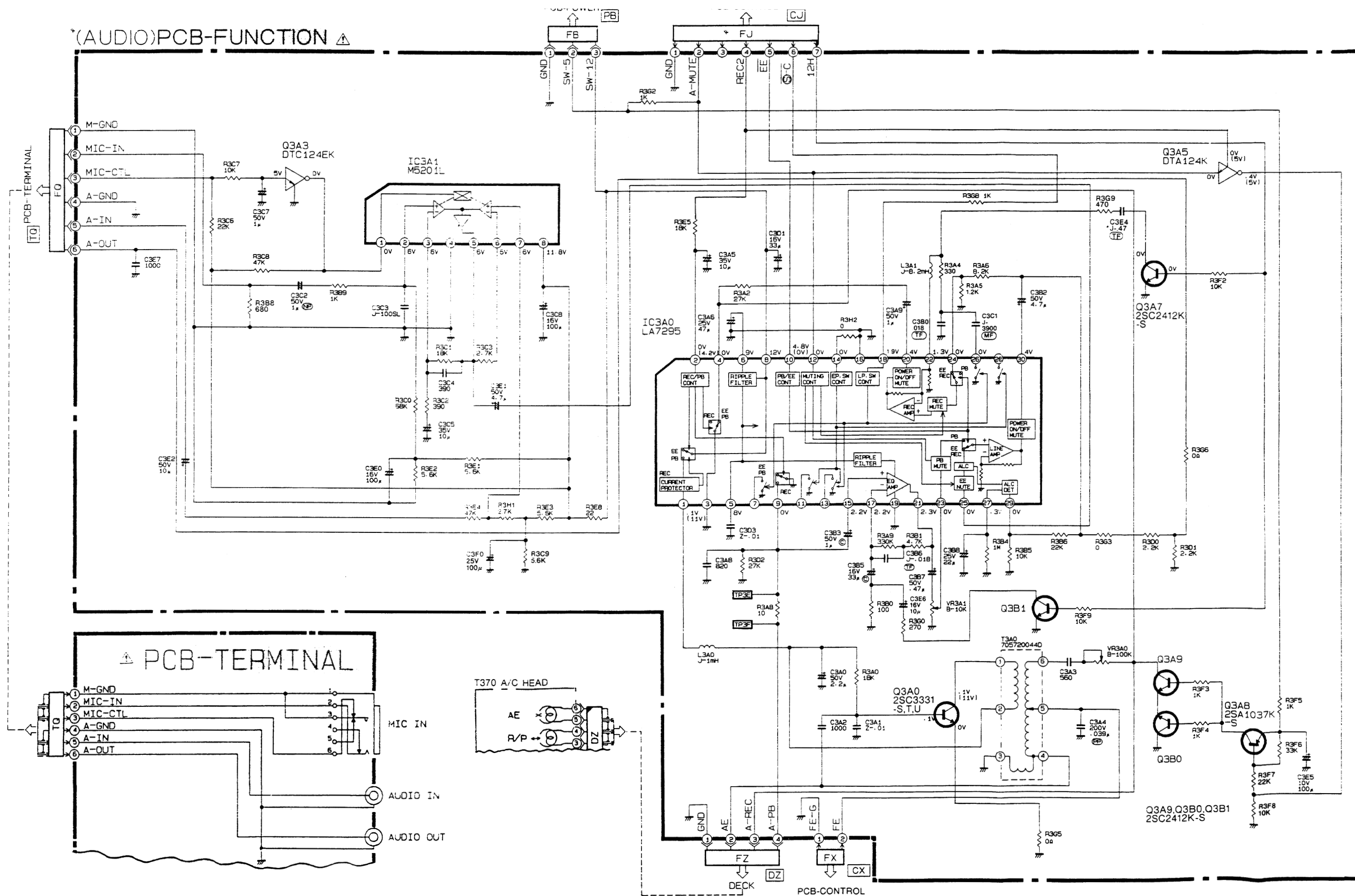
Mechanical Parts

Item	Part No.	Description
C-044	641C851010	HOLDER-T-BAND
C-045	621D509010	GEAR-1
C-050	522C076050	UNIT-REEL-DISK
C-052	641B319010	UNIT-IMP-ROLLER
C-062	591B547010	ARM-TENSION
C-063	591B552010	BELT-TENS-BRAKE
C-069	592C930010	LEVER-TENS-TU
C-070	631D136010	NUT-TAPER
C-091	572D309010	SPRING-M-B
C-092	572D391010	SPRING-TENS-REG-S2
C-093	572D390010	SPRING-TENS-REG-T2
C-094	572D312010	SPRING-TENS
C-095	572D317010	SPRING-TU-G
C-097	572D318010	SPRING-ARM-A/C
C-098	572D328010	SPRING-REC-SAFETY
C-150	669D227010	SCREW-TS M2. 6X6
C-151	669D227030	SCREW-TS M2. 6X10
C-152	669D228010	SCREW-TS-SEMS M2. 6X6
C-154	569D285040	SCREW-TB-PAN M2. 6X8
C-150	674D081020	NUT-NYLON
C-151	674D100010	NUT-NYLON-S M4X0. 7
C-175	552C007030	CUT-WASHER 2. 5
C-180	685C009010	GRIP-RING
C-181	685C009020	GRIP-RING
A-013	928D037002	ASSY-H/S-G
P-011	292C9S3010	HOLDER-H/S
P-015	299P052030	SENSOR-H Z570
P-050	569D227090	SCREW-TS M2. 6X4
A-015	591B702010	UNIT-ROLLER INCLUDE S-014
S-014	S54D074010	RING-FELT
A-016	S93C004010	BRACKET-ROLLER
A-055	590A256020	UNIT-F/L-F
A-060	572D401010	SPRING-RS
A-070	641C906010	HOLDER-CARD
A-150	669D227010	SCREW-TS M2. 5XS
A-151	669D227020	SCREW-TS M2. 5X8
A-156	659D204090	SCREW-SEMS-W M2. 5X0. 45-6
B-150	669D200040	SCREW-SEMS M2.6X0.45-10
D-030	641B310010	UNIT-LEVER-SHIFT
D-031	641B323010	CAM-MAIN-1
D-032	641C789020	PULLEY-GEAR
D-033	621C024010	PULLEY-BELT2
D-034	641C815010	HOLDER-P-CAM
D-035	621D516010	GEAR-F/L-1
D-040	522C077020	UNIT-GEAR-IDLER
D-041	522C083010	UNIT-GEAR-REEL-S
D-060	591B559010	LEVER-C
D-061	591B567010	LEVER-F/L-ID
D-062	592C830010	LEVER-RS
D-063	596D057010	WASHER-R T=0. 3
D-090	5720306010	SPRING-SHIFT
D-150	685C009010	GRIP-RING

Mechanical Parts

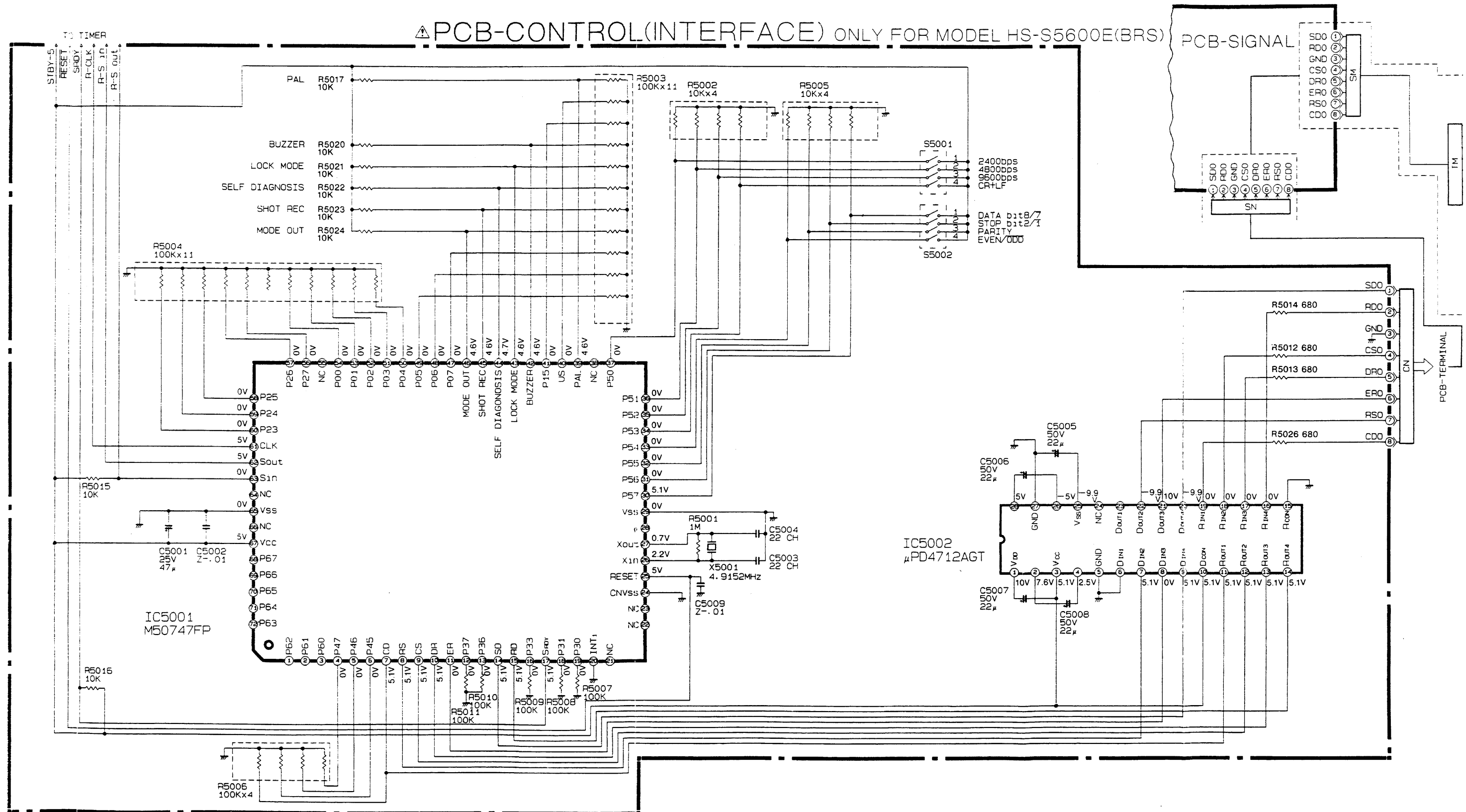
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D-175	552C007030	CUT-WASHER	2. 5
D-180	669C227010	SCREW-TS	M2. 6X6
C-013	928C510020	ASSY-PCB-DECK	
G-011	240A651020	PCB-DECK	
G-020	268P014020	TRANSISTOR	Q571 PN205L- (NC)
G-021	268P014020	TRANSISTOR	Q572 PN205L- (NC)
G-022	268P044010	PHOTO-INTERRUPTER	Q573 0N2270-R
G-023	268P044010	PHOTO-INTERRUPTER	Q574 0N2270-R
G-024	268P045010	PHOTO-INTERRUPTER	Q575 GP1L52
G-025	264P307020	DIODE-LE	D570 GL-451
G-026	264P515010	DIODE	D572 MA16S
0-040	299P124010	LATCH-MAGNET	L570
0-045	439P020010	SW-LIMIT	SW571
0-046	439P020020	SW-LIMIT	SW572
C-025	288P089030	MOTOR-CP	M470
C-026	439P019010	SW-MODE-SELECT-F	SW570
C-034	6418324010	CAM-MAIN-2	
C-038	6410795010	LEVER-IDLER-S	
C-040	621C023010	LEVER-BRAKE	
C-046	6210517010	GEAR-F/L-2	
C-047	6210518010	GEAR-F/L-3	
C-048	6210519010	GEAR-F/L-4	
C-051	522C078040	UNIT-GEAR-REEL	
C-060	591B543010	ARM-LOAD-S	
C-061	591B544010	ARM-LOAD-T	
C-064	591B554010	PLATE-CAM-C	
C-065	591B557010	ARM-GEAR-LOAD	
C-066	591B558010	LEVER-B	
C-067	592C949010	UNIT-PLATE-CAM-B3	
C-068	596D186010	PLATE-SHIELD-F	
C-095	572D313010	SPRING-CAM-C	
C-150	669D227010	SCREW-TS	M2. 6X6
C-171	552C006020	WASHER-THRUST	2. 0X0. 13
C-180	685C009010	GRIP-RING	
C-182	552C009050	CUT-WASHER	
A-017	5228048010	UNIT-BRAKE-CP	
A-018	5930009010	UNIT-TENSION	
A-019	5210071010	BELT-RIBSTER	
A-020	260P438010	TRANSISTOR	Q971 2SD1273-Q
A-041	299C024010	BRUSH	
A-057	593C116010	HOLDER BELT UNIT	
A-061	572D404010	SPRING-B-RS	
A-062	S72D445010	SPRING-B-CP	
A-071	641C928010	LEVER-B-RS	
A-150	869D227010	SCREW-TS	M2. 6X6
A-156	669D204090	SCREW-SEMS-W	M2. 6X0. 45-6
A-160	670P230010	NUT-HEX	

Audio Diagram



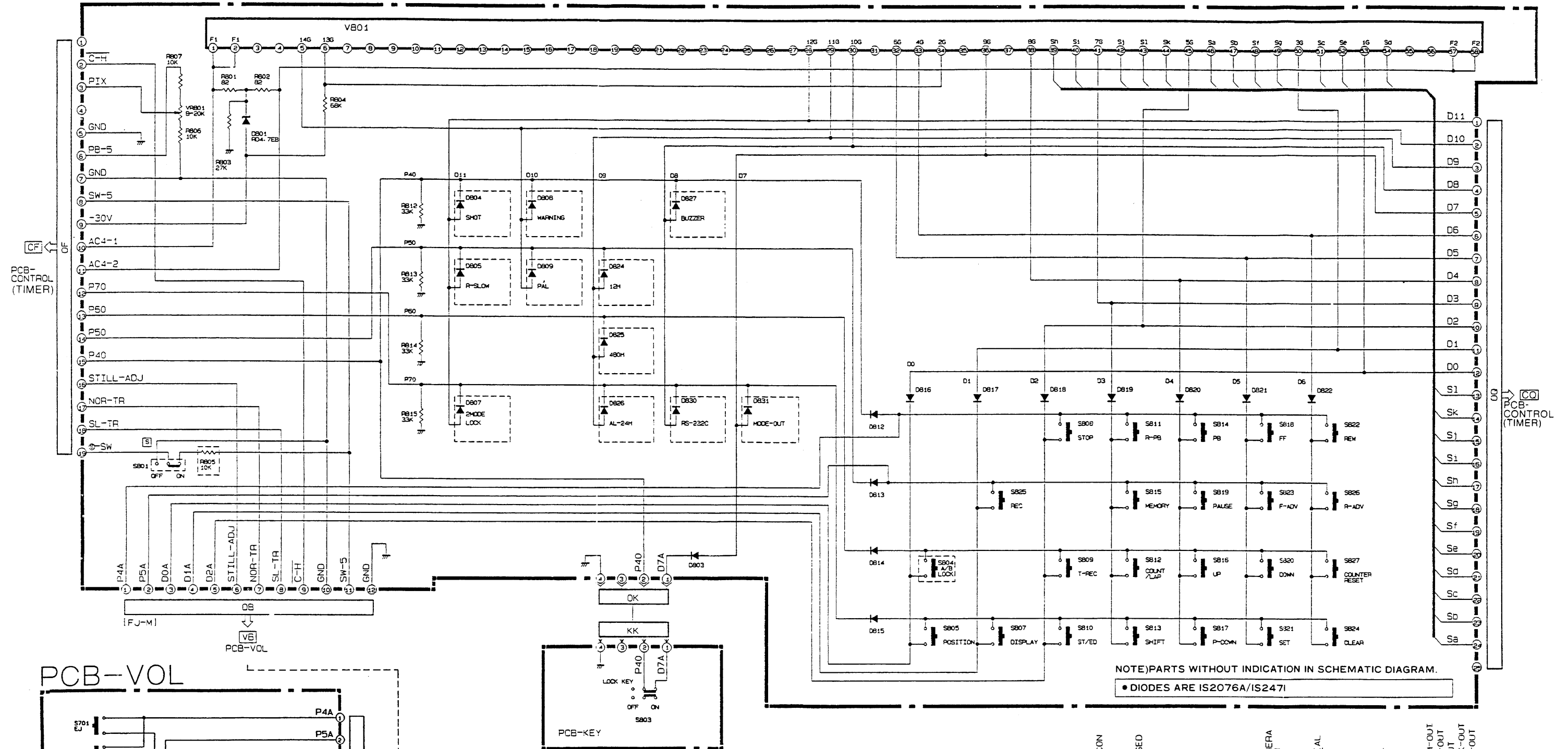
Interface Control Diagram

△PCB-CONTROL(INTERFACE) ONLY FOR MODEL HS-S5600E(BRS)

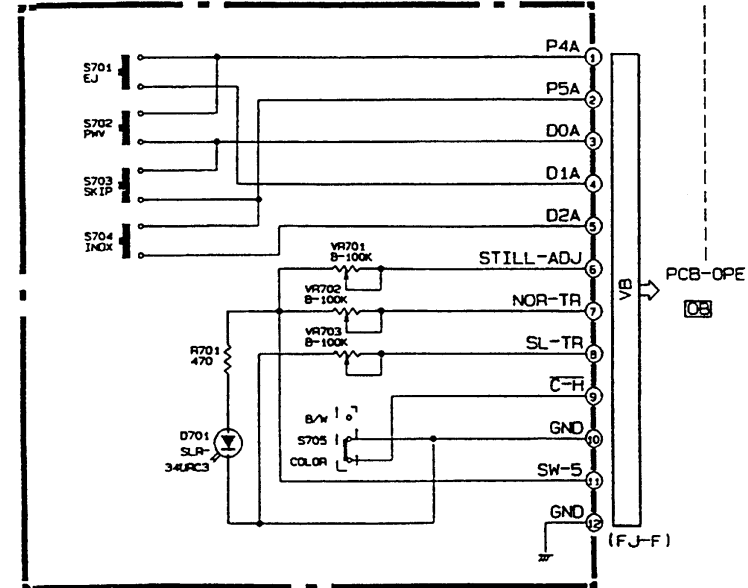


Operation Diagram

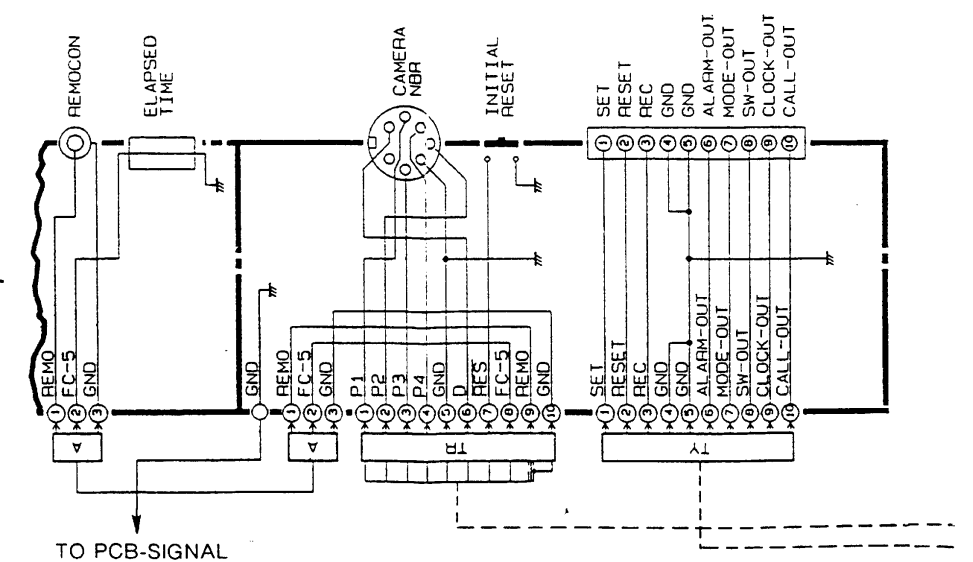
PCB-OPERATON



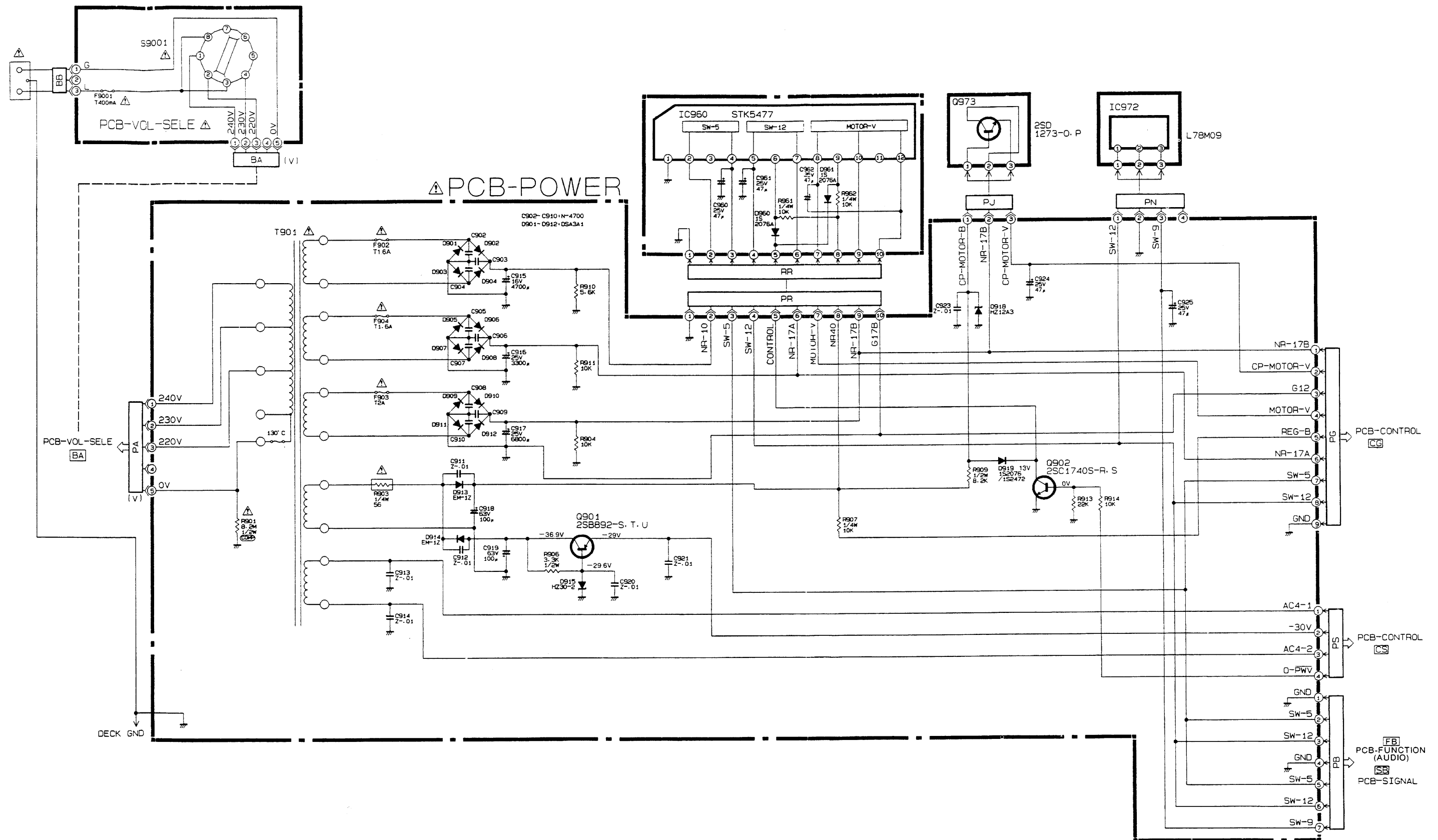
PCB-VOL



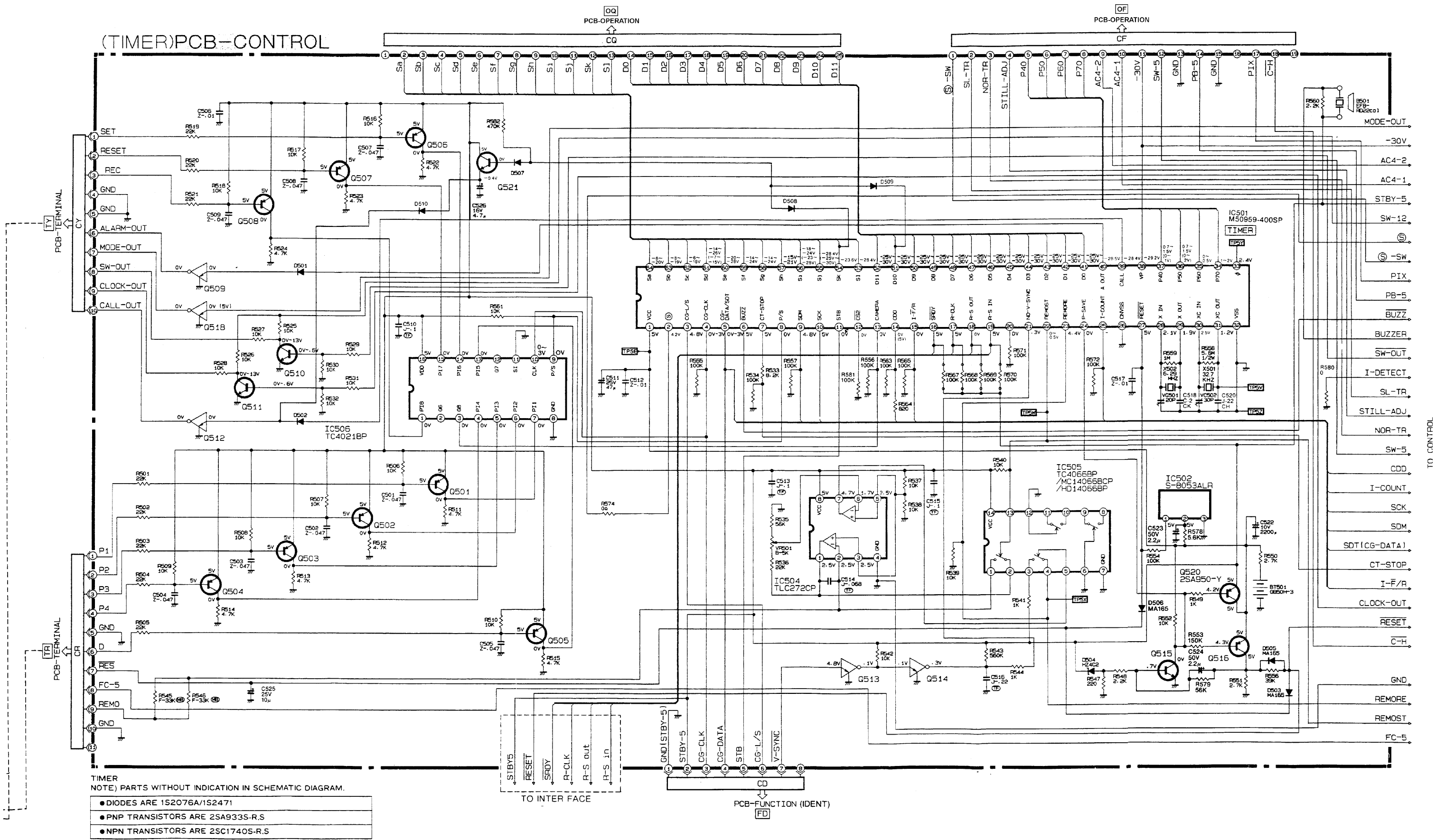
PCB-TERMINAL



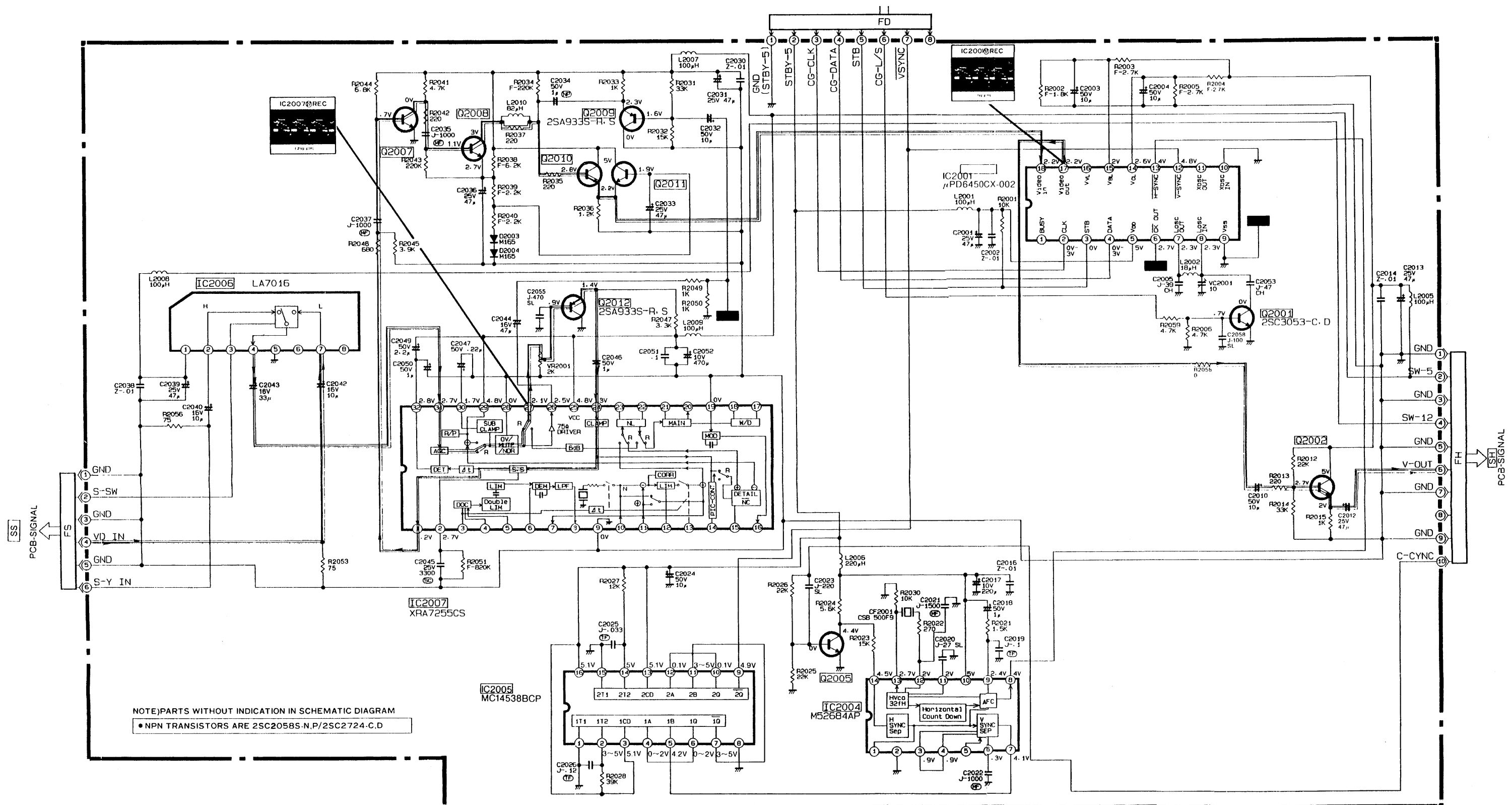
Power Supply Diagram



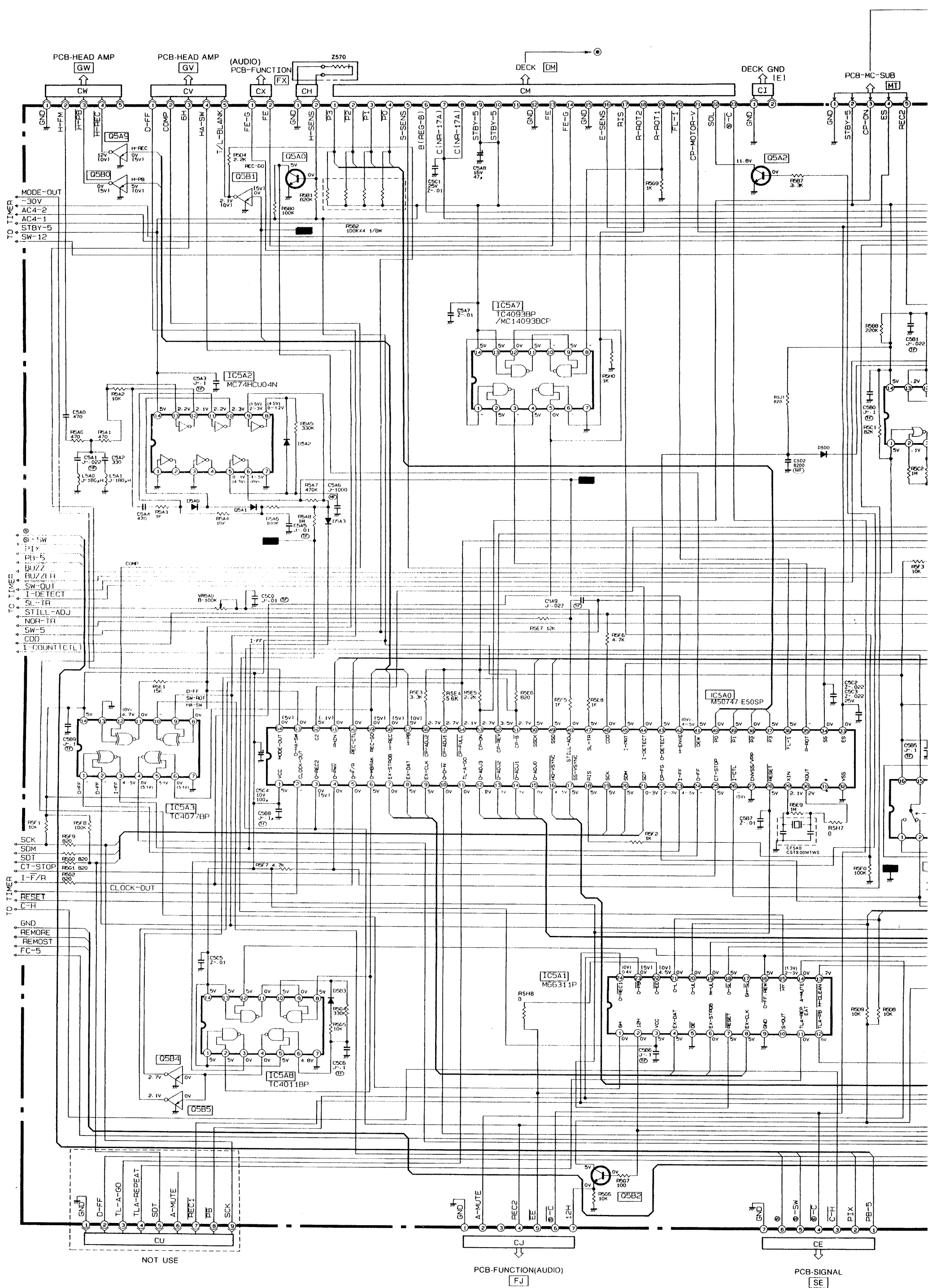
Timer Control Diagram



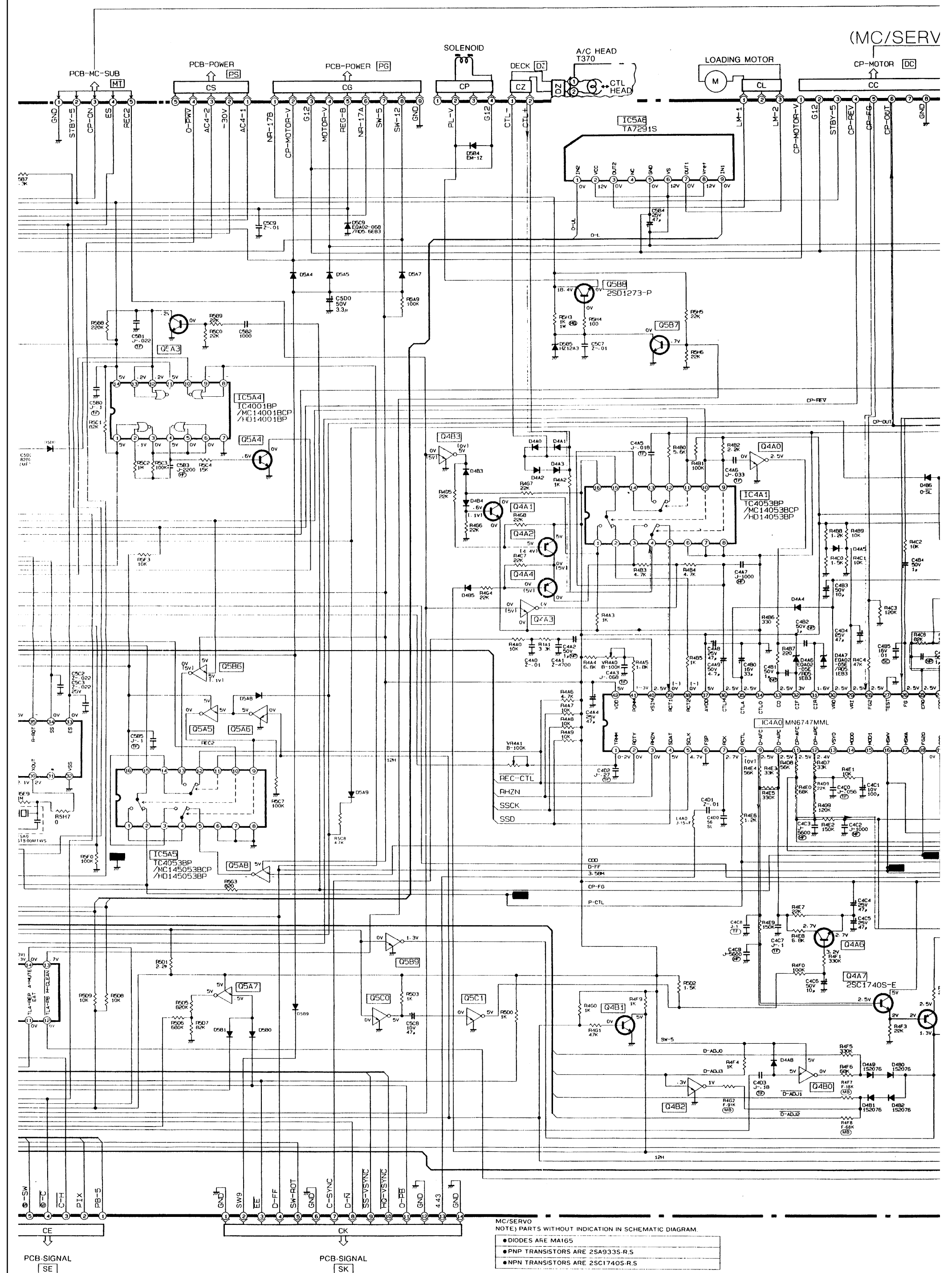
Video Ident Diagram



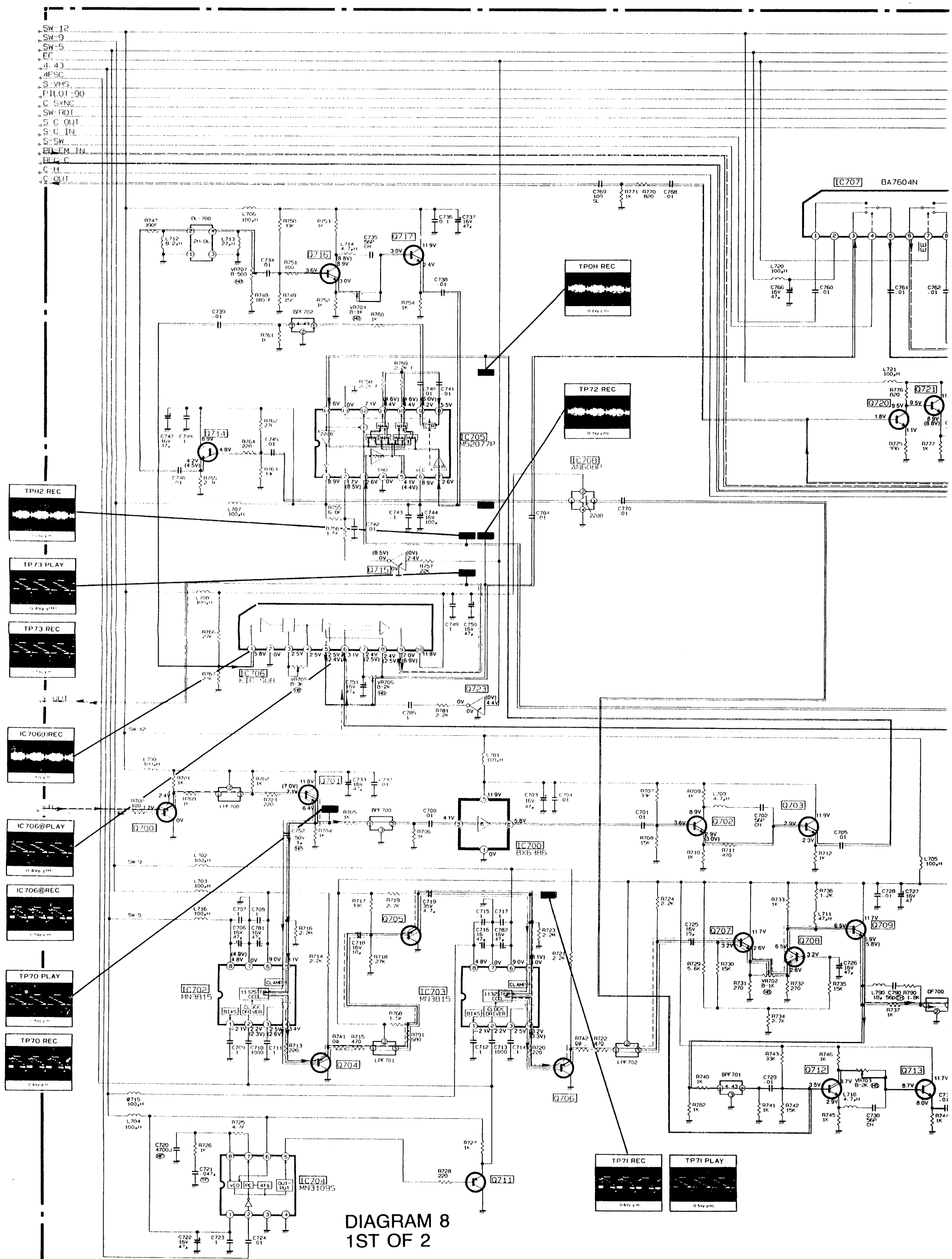
Mechanism Control & Servo Diagram 1/3



Mechanism Control & Servo Diagram 2/3

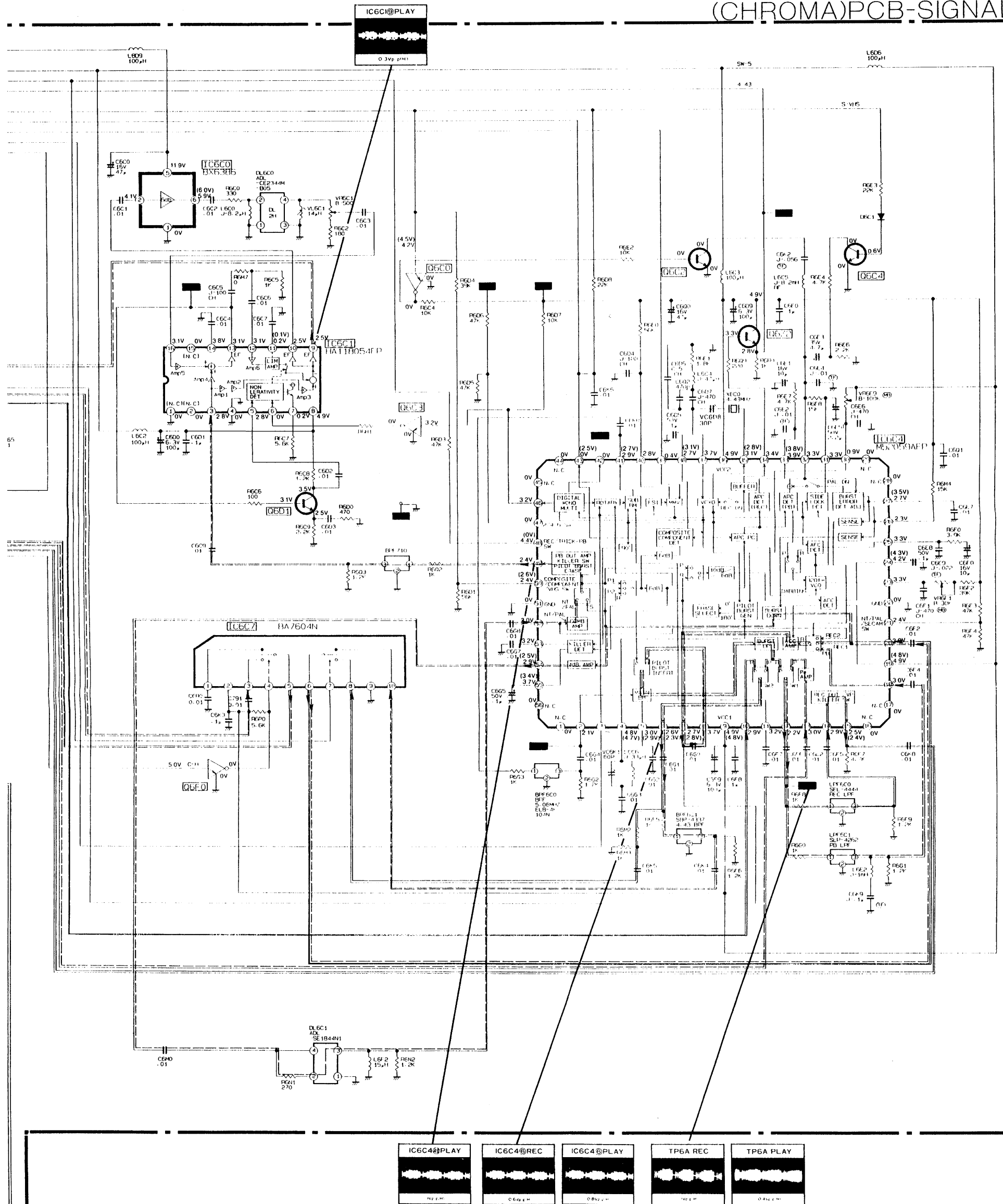


Video Chroma Diagram 1/2

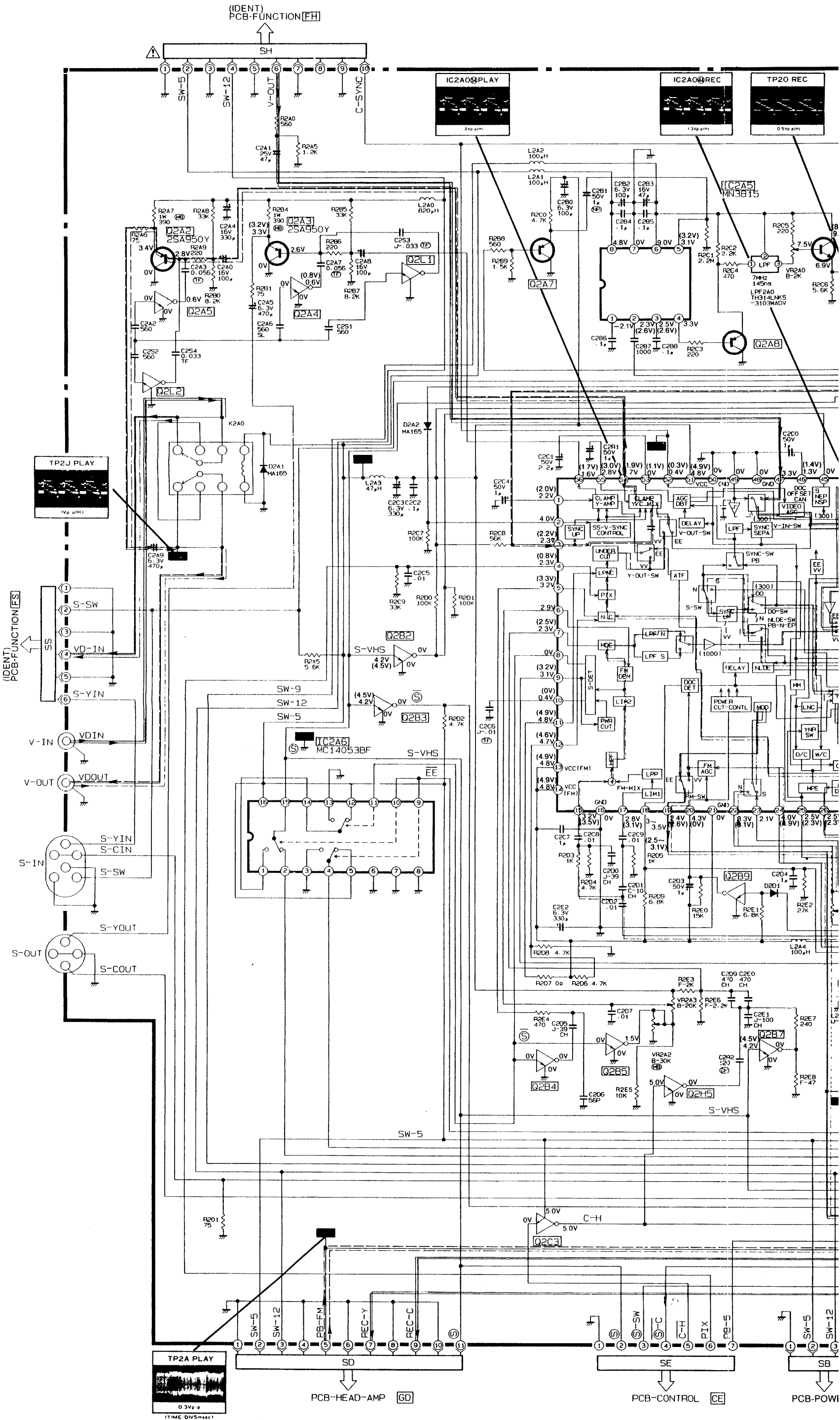


Video Chroma Diagram 2/2

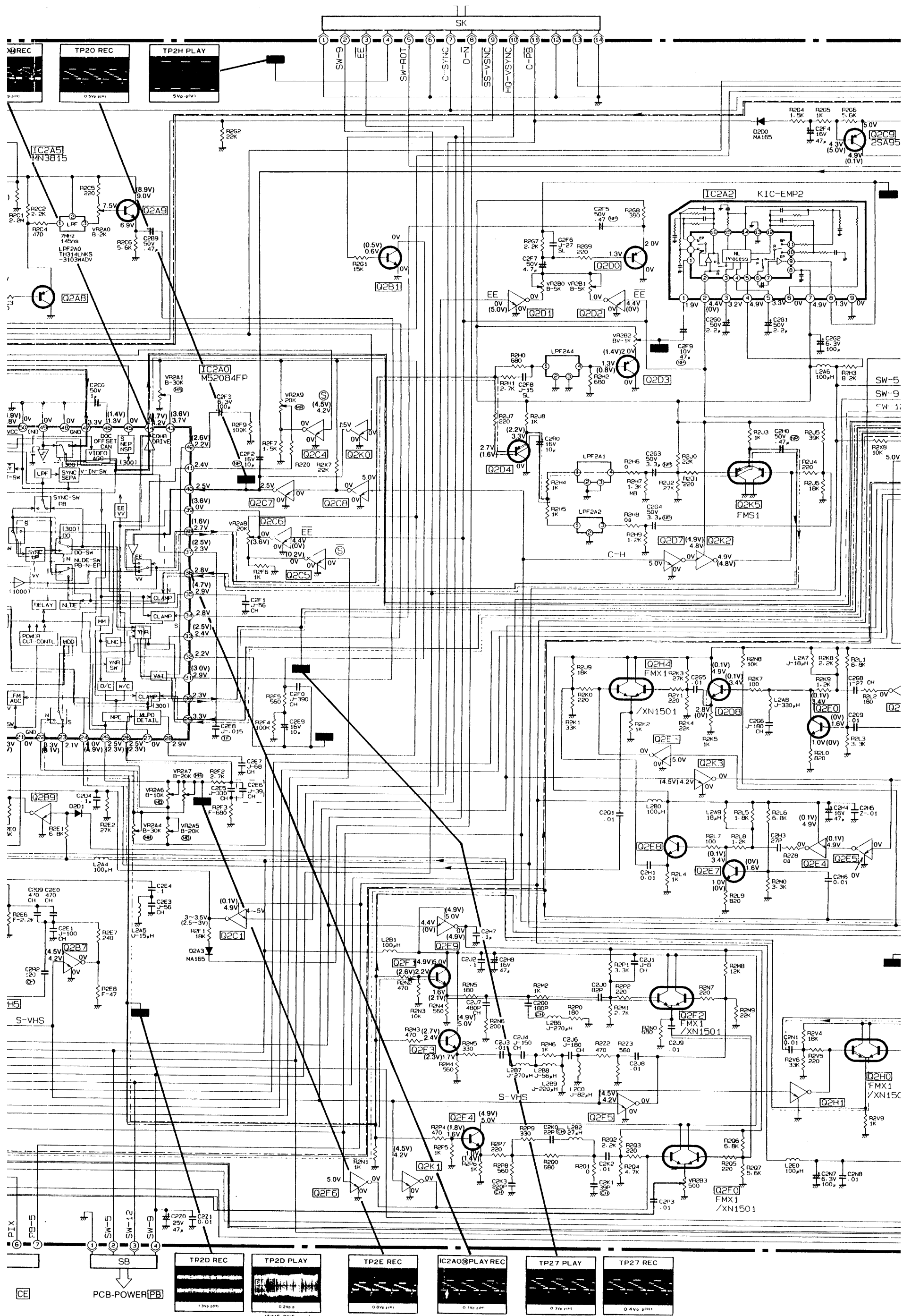
(CHROMA)PCB-SIGNAL



Video Luma Diagram 1/3



Video Luma Diagram 2/3



Video Luma Diagram 3/3

